COUNTY OF LOS ANGELES
DEPARTMENT OF AUDITOR-CONTROLLER

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J. TYLER McCAULEY
AUDITOR-CONTROLLER

December 8, 2006

TO: Supervisor Zev Yaroslavsky, Chairman
Supervisor Gloria Molina
Supervisor Yvonne B. Burke
Supervisor Don Knabe
Supervisor Michael D. Antonovich

FROM: J. Tyler McCauley
Auditor-Controller

SUBJECT: **CONSULTANT'S REPORT ON CHIEF INFORMATION OFFICE OPERATIONS & COUNTYWIDE TECHNOLOGY SERVICES**

We contracted with blueCONSULTING, Inc. to review the operations of the Chief Information Office (CIO), and evaluate CIO's effectiveness in performing its duties and achieving its mission. The CIO was established by the Board of Supervisors in 1995 to advise the Board, County departments and related groups on Countywide Information Technology (IT) activities. The CIO also reviews and makes recommendations on major proposed IT projects, and develops Countywide IT standards for approval by the Board.

Summary of Findings and Recommendations

blueCONSULTING indicated that the CIO has improved the application of IT in the County by monitoring technology changes, working to centralize planning and standards, and providing the Board with an independent assessment of IT issues. At the same time, blueCONSULTING identified opportunities to improve the County's IT services. Specifically, blueCONSULTING recommended:

- The County develop a Countywide IT governance structure, and establish an IT Steering Committee, led by the CIO, to address the existing fragmented and decentralized IT structure. blueCONSULTING indicated that the current decentralized structure results in a lack of accountability, and a focus on departmental, instead of Countywide, solutions.

- The CIO develop a Countywide IT Strategic Plan, in addition to the existing Integrated Business Automation Plan, to provide consistency in the direction of IT, more focus in the allocation of IT funding and ensure that IT projects fit the strategic goals. The Strategic Plan should include a way of measuring whether the strategies have been achieved and whether the results were cost-effective.

- The CIO establish a Project Management Office to develop a standardized project development methodology for the County, and develop standardized project practices, tools and templates.

- The IT Steering Committee be given accountability and authority by the Board to develop and approve Countywide IT policies and standards to accelerate the implementation and enforcement of these policies and standards.

Details of these and other issues are included in the attached report.

Acknowledgment

blueCONSULTING discussed their report with CIO management. The CIO's response (Attachment II) indicates general agreement with the findings and recommendations.

Please call if you have any questions, or your staff may contact Jim Schneiderman at (626) 293-1101.

JTM:MMO:JLS:MR

Attachments

c: David E. Janssen, Chief Administrative Officer
Jon Fullinwider, Chief Information Officer
Public Information Office
Audit Committee

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JON W. FULLINWIDER
CHIEF INFORMATION OFFICER

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December 1, 2006

To: Tyler McCauley
Auditor-Controller

From: Jon W. Fullinwider
Chief Information Officer

Subject: **RESPONSE TO 2006 CHIEF INFORMATION OFFICE OPERATIONS AND COUNTYWIDE TECHNOLOGY SERVICES STUDY**

Attached is a formal response to the findings and recommendations set forth in the Auditor-Controller's report entitled, *"2006 Chief Information Office Operations and Countywide Technology Services Study,"* which was conducted by blueCONSULTING.

We generally concur with the study's findings and recommendations. A number of actions identified in the study have already been initiated and are in process of being implemented. As noted in our response, some of the study recommendations involve additional department resources that will require Chief Administrative Office and Board approval to successfully implement.

Our department enjoyed a productive working relationship with both the Auditor-Controller and blueCONSULTING and look forward to implementing the study recommendations.

If you have any questions regarding this response, please contact me or in my absence, Greg Melendez at (213) 974-2008.

JWF:GM:ygd

Attachment

c: Board of Supervisors
Board IT Deputies
Chief Administrative Officer
Information Systems Commission

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CHIEF INFORMATION OFFICE (CIO)
RESPONSE TO FINDINGS AND RECOMMENTDATIONS FROM
CIO OPERATIONS AND COUNTYWIDE TECHNOLOLGY STUDY

Recommendation #1:

Establish a Governance Model with an IT Steering Committee, potentially as a part of the County's Guiding Coalition, led by the CIO which would be tasked with creating a charter and scope of authority to address these issues (IT strategy and governance), before considering the need for alternative organizational placement of the CIO function.

Response:

The CIO agrees with the recommendation and will work with the Guiding Coalition to establish a countywide IT governance model.

The CIO will work to establish the Guiding Coalition Technology Board (GCTB) chaired by the CIO, which will be comprised of a cross section of County leadership and executives and charted by the Board. We anticipate presenting the GCTB charter for Board approval by January 31, 2007. The GTCB will be charged with developing the countywide IT governance model. Additional resources may be required to appropriately staff and support an effective IT governance organization.

Recommendation #2:

The County should consider alternative funding approaches, including the development of an Enterprise Initiatives and Standards Fund. The proposed IT Steering Committee, in concert with the Chief Administrative Office (CAO), should develop a recommended funding model for the Enterprise Initiatives and Standards Fund for inclusion in the County's Fiscal Year (FY) 2007-2008 budget.

Response:

The CIO agrees with the recommendation and will work with the CAO and Information Technology Services (ISD/ITS) to develop a funding model for IT enterprise initiatives and standards for inclusion in FY 2007-08 County Budget.

The CIO in concert with the GCTB will work with the CAO to develop an appropriate funding model and seek Board approval for it in the FY 2007-08 Budget.

Recommendation #3:

Develop a separate IT Strategic Plan, present it to the new IT Governance Committee for input and approval and then communicate it throughout the County.

Response:

The CIO agrees with the recommendation and will work with the GCTB to develop and implement an IT Strategic Plan separate from strategic directions identified in the Integrated Business Automation Plan (IBAP).

The development and implementation of the plan will be addressed through the GCTB and presented within the redesigned County's Business Automation Plan (BAP) process discussed below.

Recommendation #4:

Implement the recommendations from Pacific Technology Inc. (PTI) to enhance the effectiveness of the IBAP process for the County. Provide PTI with the findings and recommendations in this report for updates and expansion of the IBAP.

Response:

The CIO agrees with the recommendation and is in the process of implementing the PTI study recommendations.

In February 2006, we engaged the services of an IT strategy consulting practice, Pacific Technologies, Inc., (PTI), to assist us in evaluating opportunities to improve and automate the department Business Automation Plan (BAP) process. We held focus group sessions with County departments to discuss and review BAP content changes and process improvement recommendations. In June 2006, PTI submitted their final report. Using the PTI study as a basis, we will be working with County departments to prioritize and implement improvements to the BAP process, including implementation of collaborative technology, for the FY 2008-09 budget process.

Recommendation #5:

Establish a formal Project Management Office (PMO) within the CIO organization to provide coordination and guidance and increase the level of training on project management activities. The PMO would be responsible for recommending a project methodology for the County and to develop and disseminate standardized project practices, tools, and templates. (Management and accountability for projects would continue to be a departmental responsibility).

Response:

The CIO agrees with the recommendation and is in the process of establishing a PMO to provide coordination and guidance on project management activities.

We plan to establish a PMO, in conjunction with GCTB and other department stakeholders, to provide guidance and coordination of department project management activities via a best practices framework. Also provide training and mentoring of project managers, but as recognized in the report the management and accountability for projects would continue to be a departmental responsibility. We believe that additional resources to properly support the proposed PMO will be necessary and will need to be addressed in the FY 2007-08 budget.

Recommendation #6:

Work with the IT Steering Committee to increase the utilization and effectiveness of Information Technology Tracking System for all County IT projects.

Response:

The CIO agrees with the recommendation and will work with the GCTB to increase utilization and effectiveness of Information Technology Tracking System (ITSS) for all County IT projects.

We will review the mandated use of the ITSS with GCTB. Also, we plan to utilize the ITSS in conjunction with the newly established PMO to support the monitoring and reporting of County IT projects.

Recommendation #7:

Ensure that qualified project managers are assigned to essential projects Countywide and review, if necessary, adjust the skill sets required for project managers.

Response:

The CIO agrees with the recommendation and will work with departments to ensure qualified project managers are assigned to County IT projects.

As recognized in the study, management and accountability for projects are a departmental responsibility. We will work with departments to ensure that appropriate project managers are assigned to key projects. Under the auspices of the PMO, we plan to establish standardized project management practices countywide and provide project manager training for departments. It should be noted that the amount of assistance that the PMO can offer will be dependent on the level of the CIO resources.

Recommendation #8:

As a part of the proposed IT Governance model and charter, the Board should delegate authority to the IT Steering Committee for development, approval, and management of IT standards.

Response:

The CIO generally agrees with the recommendation and will work with the GCTB to obtain Board approval.

Included in the proposed GCTB charter, we plan to request that the Board delegate authority to this body for approval and management of countywide IT standards.

Recommendation #9:

Work with the CAO and include a request in the CIO Fiscal Year 2007-2008 Budget request for requisite resources (staff, equipment, and space) to provide dedicated resources to address standards development and management.

Response:

The CIO agrees with the recommendation and will work with the CAO to include requisite resources to implement the study recommendations for IT governance, PMO, and IT standards development and management.

As discussed throughout this response, full implementation of the study recommendations will require additional department resources. We will work with the CAO to develop an appropriate resource plan for inclusion in the FY 2007-08 Budget.

Recommendation #10:

Define a core set of standards that incorporate existing and planned standards and overlay it against ten critical areas (as a beginning) of standard development.

Response:

The CIO agrees with the recommendation that a core set of policies and standards be identified.

We concur that a core set of policies and standards be identified, but believe the ten critical areas identified in the report are not exhaustive and should only serve as a starting point for development of policies and standards.

Recommendation #11:

Work with the proposed IT Steering Committee to develop a more streamlined standards development and approval process, subject to the Board's willingness to delegate standard approval to the committee.

Response:

The CIO agrees with the recommendation and will work with the GCTB to present a countywide standards development and approval process for Board approval.

As discussed earlier, the CIO will work with the GCTB to develop a countywide IT standards and approval process, including Board delegated authority to manage this process.

Recommendation #12:

Department CIOs/IT Managers must be charged with the responsibility to promptly implement and manage IT standards within their respective Departments, under the oversight of the IT Steering Committee.

Response:

The CIO agrees with the recommendation and will work with the GCTB to ensure Department IT standards compliance.

As part the countywide IT standards and approval process, we will include an oversight component to encourage timely adoption of IT standards by Departments.

2006 Chief Information Office Operations & Countywide Technology Services Study

Final Report

Submitted to:
Auditor-Controller
County of Los Angeles

November 2006

2006 Chief Information Office
Operations & Countywide Technology Study
Final Draft Report

Table of Contents

Chief Information Office
Operations & Countywide Technology Study
Final Draft Report

I. Executive Summary

The Office of the Chief Information Officer (CIO) is of utmost importance to the County of Los Angeles. The CIO is responsible to the Board of Supervisors in assisting them with management of an annual Information Technology (IT) budget of approximately $650 million. The CIO assists in the planning, development and implementation of IT strategies applicable to all County departments. The CIO activities also include, standards, security, strategic IT planning, contract review and project management oversight. In contrast, project-based IT planning, system and vendor selection and execution (including budgeting and resource allocation) are managed predominantly by decentralized, departmental IT groups that are aligned with the department heads and not the Office of the CIO.

The Office of the CIO has fundamentally improved the application of IT, as an enterprise asset, within the County since its inception in 1997. Advances in state of the art technology have been monitored, evaluated and implemented across the County. The effort to centralize the planning function and align the technology plans with the individual Department's business plans is continuing to mature. Master Service agreements / contracts have enabled the County as a whole to consolidate the tremendous demand for IT products and services and channel it through preferred suppliers to optimize costs. The central focus for standards development provides the departments with insight into the products and services that are considered best practices and industry accepted. Finally, the CIO has provided an independent examination and vantage point that has been valued by the Board of Supervisors and departments.

The CIO's role and responsibilities have continually expanded over the nine years since the position was first filled. Key areas of expansion are in the areas of solicitation and contract development, project management and project and departmental support. At times the CIO provides temporary management staff for departments. Also, the CIO has established a process for documenting the individual departments' IT plans and linking them to their respective Department's budget, each fiscal year. These plans include a brief discussion of the Department's three year vision for the use of IT and their general alignment with the County strategic plan. These documents are summarized to develop a County Integrated Business Automation Plan (IBAP), which documents the County's strategic direction in the use of IT and provides Countywide visibility to the County's distributed annual investment in technology.

This study reviewed the CIO and, to a limited degree, IT services within the County to determine the effectiveness of the CIO in performing its required duties and achieving its mission. The review identified leadership by the CIO while also identifying opportunities to improve the County's IT services through a formalized governance structure, a separate IT Strategic Plan, expanded content of the Integrated Business Automation Plan, and the addition of resources to address IT planning and project management across the County.

A. Summary of Key Areas Discussed in the Report

blueCONSULTING has summarized the key findings of our analysis as follows:

Organization

Although placement of the CIO in the organization is not discussed in a level of detail to warrant a specific recommendation for change, the current organization structure mostly conforms to a best practice: "Best practice calls for a strong CIO who reports to the highest executive level with the authority and accountability for developing a Vision, Strategy, and tactics to support the IT function. It is now common for the CIO to have a central organization". Several of these points are discussed in this report with the full scope of the central organization requiring further study.

Decentralization

Although the County has moved in several areas toward a more centralized approach, most IT functions and responsibilities are decentralized in the County which leads to duplication of efforts and redundancy of organizations and data centers in the County. Decentralization of IT also distributes the governance of IT (i.e. structure, process, communication) across these numerous departmental IT organizations, each focused on providing best services to fulfill their IT demand. This frequently places the proposed Countywide IT initiatives in direct competition with departmental priorities and projects.

The Board of Supervisors and County department management need to elevate IT optimization to an issue of strategic importance by reviewing and improving existing IT structures, processes and communications. The current decentralized IT governance model bears inherent risks (lack of standard adoptions, insufficiently enforced security policy), cost inefficiencies (cost/time overruns of projects, decentralized purchasing and contract management) and lack of accountability that could be resolved with the central management of specific IT functions. In particular, a new IT governance model needs to address business/IT alignment, strategic IT planning, performance measurement, standards, project management and resource/contract management.

IT Governance

IT has advanced at the core of most 21st century business with today's focus on optimizing IT investments. Good IT governance ensures that IT investments are optimized, aligned with business strategy, and delivering value within acceptable risk boundaries, taking into account culture, organizational structure, processes, maturity and strategy. The County's IT budget of approximately $650 million annually represents a significant investment challenge to effectively and efficiently allocate funds to optimize IT decisions.

The County lacks a Countywide IT Governance Model and the process for setting priorities and managing limited resources is ambiguous and convoluted. The lack of a Countywide, Board approved IT governance model on how enterprise IT decisions are being made and executed puts the Office of the CIO at a significant disadvantage. Critical time and resources are being invested

on creating repetitive "soft" interfaces (mostly advisory, steering committees and ad-hoc task groups) between the CIO and local IT organizations to develop solutions without having the charter of making timely and critical decisions. As a consequence, many initiatives such as formulation of IT policies, adoption of IT standards, finalization of the Countywide IT security plan or implementation of consistent project tracking and monitoring are delayed and only partially implemented.

IT Governance is managed primarily at the departmental level and not at the County-level. With that, the CIO must negotiate for "buy-in" from the departments with little authority to make and implement Countywide IT decisions. Critical shortcomings include the following:

- IT functions and responsibilities are decentralized.
- IT accountability is not measured nor managed across the County.
- IT skills are lacking in critical areas such as project management, IT planning, IT/business alignment, risk management, centralized contract management and overall IT progress communications.
- IT funding and budgeting is decentralized, favoring departmental solutions over Countywide shared solutions.
- The CIO office has, out of necessity, played a more tactical, rather than a strategic, role.

If the Countywide IT Governance is not addressed in a timely matter, the CIO will continue to perform in an advisory capacity lacking the structure, processes and communications to actively plan for and impact Countywide IT initiatives. The process of not only advising and planning but also owning and/or co-owning the implementation of initiatives is critical to creating accountability and results for the County.

The Role of the CIO

The Office of the CIO performs many functions in support of all County departments including, department liaison, project management / support and oversight, standards development and implementation , IT strategic planning, contract management, technology reviews, and security standards and policies. The CIO is also expected to intervene in operational emergencies where they provide leadership in resolving the issue (network outages, security breaches, etc.). The CIO associates are expected perform all of these duties with the exception of the three members who are largely dedicated to the security function. However, even the security team is expected to assist when they have a security operational breach. This puts a strain on the CIO staff as the County IT demands grow, requiring greater focus and specialization.

The recommendations outlined in this report will put additional strain on the Office of the CIO. It should be acknowledged that it will be necessary to acquire additional specialized staff and/or reassign existing staff to meet the future County IT demands.

Strategic IT Planning

The CIO has responsibility for vision and strategy but is increasingly challenged to address these due to the continually evolving operational requirements that include project support (contract

development, requirements development, etc) and project management, which were not defined in the ordinance establishing the Office. This has focused resources on tactical activities constraining the development and implementation of the CIO's strategic vision.

The CIO established the annual development of an IT Business Automation Plan (BAP) and the subsequent development of the Integrated Business Automation Plan (IBAP). The IBAP includes the CIO's description of strategic direction, the linkage of specific projects (not the IT goals or objectives) to the County Strategic Plan, and tactical activities and projects across the County for the current fiscal year.

IT Strategic Plans are frequently discrete documents that focus on a multi-year (3-5 years) view of the IT landscape for the organization. This includes the technology direction, discussion of the linkage to the organization's Strategic Plan, discussion of the Countywide IT resource availability and skills mix, and the goals and objectives for users and staff, budgetary priorities and strategies, etc. The CIO has included discussions of these areas in their instructions for the development of the Departmental BAPs, and discusses some of these items in the resulting IBAP. However, the CIO should prepare a separate Strategic Plan to communicate Countywide IT vision and direction to the various stakeholders in the County. The plan should include measurable metrics (target timeframes to achieve specific IT objectives and goals) to measure success or progress of the plan, rather than the current focus on project progress.

Project Management and Oversight

The ten Associates CIOs that are the liaisons to the departments attempt to provide oversight on Departmental IT activities, including projects, but the CIO has limited impact on the outcome of projects and does not officially have accountability for project management. In particular,

- Projects are not consistently tracked and monitored across all County departments.
- Projects are prioritized, funded and staffed by the departments with little control from the CIO.
- Skilled project management resources are missing or in short supply across the County.
- No standard project management methodology is used for executing projects.

IT Standards

The establishment of standards with the approval of the Board is in the charter for the CIO. Current processes are lengthy and cumbersome because of decentralized IT structure within the County. Additionally, the implementation rate for IT standards (including security standards) should be accelerated across all categories. The IT standard development process is very long and complex, and lacks sufficient dedicated resources, which extends the timeframe to formally recommend a standard.

- Standards are developed but the review and approval process provides little flexibility for prioritization based on importance and urgency.

- The process used to release IT standards is time consuming and takes too long based, in part, on the rapidly changing IT environment.
- Limited resources and funding is available to promote/support the timely adoption of standards Country-wide.

B. Summary of Opportunities for Improvement

In conclusion, blueCONSULTING proposes that the Board of Supervisors approve the formation of an IT governance model that includes the CIO as chair of an IT Steering Committee. The IT Steering Committee's first actions should be the development of an IT Governance Charter for Board approval. The charter should include their responsibility to exercise authority delegated by the Board to approve and adopt IT Policies and standards, identifying enterprise opportunities, challenges and other areas of strategic importance to the County, such as project management, ranking and oversight of enterprise initiatives, shared services, and standards, etc.

The County, through its IT Steering Committee, should examine the feasibility of centralizing responsibility for strategic IT resources, i.e. funding to support enterprise initiatives, security, workforce development, etc. In particular, we recommend the IT Steering Committee review centralizing the accountability for and emphasizing the importance of, the following areas:

IT Strategic Planning
Drive greater flexibility and accountability into the current IBAP process by increasing and expanding the strategic direction and focus of the IBAP, and prepare a separate Countywide IT Strategic Plan that appropriately communicates IT vision and direction, and measures progress on IT goals and objectives achievement.

Standard's Management (including IT Security Standards)
The Board should consider delegating IT accountability and authority to the IT Steering Committee to establish IT policies and standards. Improve processes and training/communication tools to accelerate the implementation and enforcement of standards throughout the County.

Leverage the existing nucleus of resources within the CIO to create a County IT Standards development and management process to create, review, enhance and sunset standards for the County. Empower this group to train, communicate and re-enforce compliance with standards.

Project Management
Create a centralized project management office and standard project management methodology to provide advice on project management processes, track, and monitor projects and provide training to improve project performance (on time, on budget). Provide this central entity with adequate resources (project managers, subject matter experts) to make a significant contribution during the planning and serve as a resource to departments during the ongoing management phase of projects.

CIO Operations and Countywide Technology Services Study Survey of IT Personnel

County departments, grouped by functional areas, were asked to rate the CIO on questions grouped within four categories (see summary below and detailed results in Chapter VI, and Appendix B for a copy of the survey and the subjective comments). The CIO received scores across each group of questions, with the lowest average score of 3.43 on a five point scale (with functional group averages ranging from a low of 2.50 to a high of 5.00). The survey reflects a fairly consistent view across the 37 departments responding that the CIO has been effective in guiding IT services within the County. As would also be expected, the survey also identified areas where the rating could be improved for the departments.

The survey comprised a number of statements within four Statement Groups reflecting the mission of the CIO (See Chapter VI and Appendix B for survey and comments). The Statement Groups are: Role of the CIO; Setting IT Strategy; Setting IT Standards; and Planning and Support. The respondents were asked to indicate their degree of agreement with the various statements as an indication of their satisfaction. The responses were valued where strong agreement was assigned a value of 5 and strong disagreement was assigned a value of 1. Average or neutral responses received a 3. The response values were averaged and summarized by Statement Group, as well as by other parameters. To ensure confidentiality of response, blueCONSULTING grouped the 37 respondents into five functional categories: General Government (19 responses); Social Services (six responses); Public Safety (nine responses); and Health Services (two responses). The exception to the confidentiality goals was for the Internal Support functional group where only Internal Services Department (ISD) responded. A list of the representative departments and number of responses for each is provided in Appendix B.

Survey Analysis – Empirical Section

1. The results of the analysis by Functional Group, Department Size and whether the Department has a CIO appear within the body of the report (see Chapter IV – CIO Relationships with Other County Departments).

The Summary of the Overall Results from the survey are shown below, by question.

Exhibit 1: Survey of Countywide IT Personnel Results Summary
(Number of Respondents = 37)

Question	Overall Average
Role of the CIO	
1. My organization understands the role of the office of the CIO.	4.22
2. The office of the CIO is effective in providing professional guidance and advice on Countywide IT issues.	3.95
3. My organization believes the CIO's office provides the leadership and vision to move IT in a direction that best services our operations and our clients.	3.69
Role of the CIO Average	**3.95**

Exhibit 1: Survey of Countywide IT Personnel Results Summary
(Number of Respondents = 37)

Question	Overall Average
Setting IT Strategy	
4. My organization understands and supports the IT strategic goals of the County:	4.43
• Conduct County government electronically • Provide secure access to electronic applications • Utilize enterprise solutions to meet common needs • Improve the IT skills of the County workforce	
5. The office of the CIO is effective in developing a Countywide IT strategy.	3.76
6. The office of the CIO is effective in communicating the County's IT strategy.	3.70
7. My organization agrees with the IT Strategy as set forth in the 2005-2006 IBAP.	4.06
Setting IT Strategy Average	**3.99**
Setting IT Standards	
8. The office of the CIO is effective in establishing appropriate Countywide hardware, software and networking standards.	3.49
9. The office of the CIO is effective in communicating County hardware, software and networking standards.	3.57
10. My organization supports the following standards published by the CIO's office:	
10a. Processor – Intel P4/Centrino	4.11
10b. Desktop Operating System – Windows XP	4.24
10c. Server Operating System – Windows Products (NT, 2000, 2003)	4.14
10d. Security – Symantec or McAfee	4.38
10e. Productivity – Microsoft Office	4.19
10f. Internet Browser – Internet Explorer	4.16
10g. E-mail – Microsoft Exchange	3.97
11. The office of the CIO is effective in implementing and enforcing hardware, software and networking standards.	3.24
Setting IT Standards Average	**3.95**
Setting IT Standards w/o Question 10	**3.43**
Planning and Support	
12. The office of the CIO reviews and makes valuable recommendations on proposed IT projects.	3.84
13. The office of the CIO is effective in the planning of enterprise-level projects for the entire County.	3.51
14. The office of the CIO is effective in the implementation of enterprise-level projects for the entire County.	3.27
15. The office of the CIO provides my organization with valuable insights to ensure the alignment of our department plan with Countywide goals.	3.69
Planning and Support Average	**3.58**

Exhibit 1: Survey of Countywide IT Personnel Results Summary
(Number of Respondents = 37)

Question	Overall Average
Overall	**3.89**
Overall w/o Question 10	**3.74**

Summary

In summary, although great progress has been made, there are a variety of governance, organizational, and accountability opportunities for improvement that exist in the management of technology services for the County of Los Angeles. Development and realization of the opportunities will require a willingness by the Board to establish a governance structure, to which they may delegate the authority to establish Countywide IT policies and standards, and to invest in resources to expand strategic planning and project management activities. These are presented in Exhibit 2: Summary of Findings and Recommendations.

Exhibit 2: Summary of Findings and Recommendations

Findings	Corresponding Recommendations
Governance and Organization (Chapter III)	
Finding #1: County of Los Angeles' IT operations and governance structure are fragmented and decentralized. Finding #2: The effectiveness of the CIO is impacted more by the existing governance structure than the organizational placement of the function.	Recommendation #1: Establish a Governance Model with an IT Steering Committee, potentially as part of the County's Guiding Coalition, led by the CIO which would be tasked with creating a charter and scope of authority to address these issues, before considering the need for alternative organizational placement of the CIO function.
Finding #3: IT budgeting and funding is decentralized, favoring departmental solutions over Countywide, shared solutions.	Recommendation #2: The County should consider alternative funding approaches, including the development of an Enterprise Initiatives and Standards Fund. The proposed IT Steering Committee, in concert with the Chief Administrative Office (CAO), should develop a recommended funding model for the Enterprise Initiatives and Standards Fund for inclusion in the County's Fiscal Year 2007-2008 budget.
CIO Role in Countywide IT Planning (Chapter IV)	
Finding #4: Although the IBAP provides a good product, it is insufficient as a comprehensive Countywide IT Strategic Plan.	Recommendation #3: Develop a separate IT Strategic Plan, present it to the new IT Governance Committee for input and approval and then communicate it throughout the County.
Finding #5: Although a good process that has been substantially improved over the past several years, the IBAP process needs additional enhancement and improvement.	Recommendation #4: Implement the recommendations from Pacific Technology Inc. (PTI) to enhance the effectiveness of the IBAP process for the County. Provide PTI with the findings and recommendations in this report for updates and expansion of the IBAP.

Exhibit 2: Summary of Findings and Recommendations

Findings	Corresponding Recommendations
Finding #6: The Office of the Chief Information Officer has limited impact on the outcome of projects and does not officially have accountability for project management. No standard project management methodology exists.	Recommendation #5: Establish a formal Project Management Office (PMO) within the CIO organization to provide coordination and guidance and increase the level of training on project management activities. The PMO would be responsible for recommending a project methodology for the County and to develop and disseminate standardized project practices, tools and templates. (Management and accountability for projects would continue to be a departmental responsibility).
CIO Role in County Project Management (Chapter V)	
Finding #7: IT Projects are not consistently tracked and monitored across all County departments. Although there is no centralized database to track all IT projects within the County, the projects that are being tracked indicate substantial problems.	Recommendation # 6: Work with the IT Steering Committee to increase the utilization and effectiveness of the Information Technology Tracking System for all County IT projects.
Finding #8: There is insufficient emphasis placed on project management skills throughout the County, which contributes to the lack of timely and on-budget project completion.	Recommendation #7: Ensure that qualified project managers are assigned to essential projects Countywide and review and, if necessary, adjust the skill sets required for project managers.
Finding #9: IT Standards adoption rates are low across all standard categories (except specific desk top applications).	Recommendation #8: As part of the proposed IT Governance model and charter, the Board should delegate authority to the IT Steering Committee for development, approval and management of IT standards.
CIO Role in Establishing Standards (Chapter VII)	
Finding #10: There is a lack of dedicated resources to manage the entire IT Standard Process**.**	Recommendation #9: Work with the CAO and include a request in the CIO Fiscal Year 2007-2008 Budget request for the requisite resources (staff, equipment, and space) to provide dedicated resources to address standards development and management.
Finding #11: There is not a clear sense of which standards should have priority and would provide the greatest benefit to the County**.**	Recommendation #10: Define a core set of standards that incorporate existing and planned standards and overlay it against ten critical areas (as a beginning) of standard development (see Exhibit 10 below).
Finding #12: The process used to develop and release IT Standards takes too long.	Recommendation #11: Work with the proposed IT Steering Committee to develop a more streamlined standards development and approval process, subject to the Board's willingness to delegate standard approval to the committee.

Exhibit 2: Summary of Findings and Recommendations

Findings	Corresponding Recommendations
Finding #13: Communication of standards is not structured or formalized to the Departments and Board.	Recommendation #12: Departmental CIOs/IT Managers must be charged with the responsibility to promptly implement and manage IT standards within their respective Departments, under the oversight of the IT Steering Committee.

C. Opportunities for Additional County Study

blueCONSULTING addressed the majority of items identified in the Request For Proposal (RFP) and Work Order. However, there are some issues which were beyond the scope and budget of the project. Therefore, there are several areas in which the County may benefit from additional study when considering changes to the provision of IT services within the County. These include:

- Further study on the organizational placement of the CIO and the centralization of all IT functions.
- Further study on the structure and staff levels within the CIO with the intent of developing specialized skills dedicated to specific functions.(i.e. Project Management , Standards, Account executives , Contract Management, etc.).
- Further study identifying the opportunities to centralize specific IT functions, processes and controls spanning hardware, software, and networks.
- Funding study to determine optimal approach to funding enterprise initiatives and standards implementation.
- Skill level and mix of IT resources within the County.
- Position descriptions and availability of resources for recommended IT functions and positions.
- The role played by ISD in the governance and operations of IT within the County (this study focused on the role of the CIO).

II. Introduction

This Draft Report presents the results of the Chief Information Office Operations & Countywide Technology Study conducted by blueCONSULTING, INC. This chapter, the Introduction, provides the study objective and scope, discusses the methodology blueCONSULTING used to conduct the study, provides a brief description of the organization and purpose of the Office of the Chief Information Office (CIO), and outlines the organization of the report itself.

A. Audit Objective and Scope

The County is interested in performing a review of the operations of the CIO to determine the effectiveness of the CIO in performing its required duties and achieving its mission, and comparing those operations to best practices within the IT industry. Specifically, according to the Statement of Work submitted in response to the County Request for Proposals, the project addressed the following five objectives:

- Evaluate the appropriateness of the organizational placement of the CIO function and determine whether it should remain a stand-alone department or be part of a larger, central service department. This will require that the consultants determine the effectiveness of the CIO's Countywide planning function through evaluation of its strategic technology planning, establishing standards, reviewing the CIO's project evaluations and oversight, and participating in major technology projects over the past three years.
- Evaluate the CIO's current role in overseeing the setting of standards and reviewing their development and management of current and future security needs for County technology.
- Evaluate the relationship of the CIO with technology staff in other County departments and the appropriateness of larger departments establishing independent CIO positions.
- Examine the CIO's role in technology planning in departments without CIOs or technology staff.
- Review the compatibility of the CIO functions with the role of the Internal Services Department and determine any duplication of roles, authority, etc. for the technology infrastructure planning, standardization, and oversight of technology in County departments.

(Note: Further discussion of objectives after initiation of the project indicated the need for a focus on objectives 1-4. While objective 5 will be briefly discussed, further study in this large area of effort is recommended.)

B. Study Approach and Methodology

The blueCONSULTING approach to operational reviews ensures the delivery of a high quality product in a cost-effective and timely manner. Our approach is designed to promote:

- A focus on the specific needs of the Board of Supervisors and Auditor-Controller.
- Reliance on quantitative data where available, such as contracts and written policies, to support findings.

- Commitment to timely implementation of recommended changes.
- Open communication among all parties.
- Active client involvement.
- Strict maintenance of confidentiality, as appropriate, throughout and after project completion.
- Rigorous documentation of study findings.

The methodology involved a phased approach in which the consultants gathered data and other information from internal and external sources, and conducted interviews of members of the CIO's staff, Board offices, other County departments, and key stakeholders (A list of documents reviewed and personnel interviewed are included in **Appendix A**). In addition to interviews and document reviews, blueCONSULTING:

- Developed, distributed, and evaluated a brief survey of CIO relationships and services provided to other County departments.
- Conducted a brief employee survey to gain perspective on work level, work requirements and expectations.
- Reviewed existing benchmarking studies of other Information Technology (IT) functions and services, as available.

These information-gathering activities were followed by an analytical phase that culminated in the preparation and presentation of this report with specific findings and recommendations for improvement.

C. Brief Description of County IT, including the Office of the CIO

Two County departments have primary responsibility for providing centralized information technology services to departments and functions throughout the County of Los Angeles: the CIO and the Internal Services Department (ISD). Additionally, individual departments have a variety of IT-related functions that provide IT services and operations.

In response to concerns about the level of centralized service provided to County departments from by ISD, the Board allowed for a decentralization of information technology in 1989. Several departments, including the Sheriff and Department of Health Services, decentralized completely (except for mainframe based applications). In general, ISD provides those services that department's contract for them to provide. For example, they have been contracted to support all or nearly all IBM and Unisys mainframe based applications. They are also responsible for central support and management of the enterprise network. Other departments chose to depend on ISD for various levels of centralized support.

Inception and Authority of the CIO

The CIO was created as a result of three seminal events. First, acting on recommendations of the Economy and Efficiency Commission, the Board of Supervisors created the Internal Services Department in 1989 which included disbanding the Department of Data Processing as a separate department and central entity for IT and creating Information Technology Services as a branch of

ISD, was the first seminal event. The second seminal event was the Board's creation of the Office of CIO in 1995, with the third event being the subsequent hiring of the first, and current, CIO in early 1997.

At the time of the creation of the CIO, the Chief Administrative Officer (CAO) recommended the Information Technology Services (ITS) and CIO be aligned to report to the Auditor-Controller. The Data Processing and Telecommunications Advisory Committee (DPTAC) strongly argued that the CIO should be established separate from ITS and independent of the Audit-Controller, instead reporting directly to the Board. The DPTAC (currently known as the Information Systems Commission or ISC) felt that the CIO should set strategy, advise the Board on information technology, establish Countywide standards, and monitor department-level projects. As a result, the following charter amendment outlining the duties of the CIO was adopted:

According to Article 2.119.030 Duties of the CIO, the office shall:

A. Provide professional guidance and advice on Countywide information technology activities to the Board of Supervisors, County departments, and County information technology bodies.

B. Review and make recommendations concerning proposed major information technology projects of County departments and County information technology bodies. It is the responsibility of County departments and County information technology bodies desiring to pursue major information technology projects to submit such proposals to the office for review and recommendations.

C. Adopt standards for Countywide information technology which shall be subject to approval by the Board of Supervisors. County departments and County information technology bodies shall adhere to such standards. (ord. 95-0073 2(part), 1995).

The CIO has no direct authority over other County departments, except for establishing and recommending standards for Board approval, and approving Board Letters. The Office attempts to influence County departments' technology projects through recommendations and reports, but has no formal authority to enforce its evaluations of recommended changes in department technology projects, related security, etc. However, the systematic development and review of plans for IT provides a mechanism for evaluating the County's overall IT capability and future direction. It also establishes a baseline useful for informed decisions regarding the cost-effective allocation of limited financial resources. Projects with services costing over $100,000 need a recommendation by the CIO prior to approval by the Board.

To assist the CIO in his duties, the Business Automation Process (BAP) was developed. BAP is a database and tracking system to monitor IT projects, technology capabilities, and gaps throughout the County. The CIO uses the BAP process as a part of its oversight function. The BAP continues to be refined to include additional strategic reporting and data collection sections. The CIO obtains information from other County departments and prepares an annual Integrated Business Automation Plan (IBAP) which serves as a resource management tool for County departments and the beginning of the CIO's strategic planning efforts.

The CIO has been on a steady course of extending its influence through the:

- Establishment of advisory committees.
- Implementation of standards.
- Improvement of the Integrated Business Automation Plan (IBAP) process
- Creation and management of the Information Technology Fund
- Formalization of the request for IT project funding
- Increased monitoring/managing of IT projects

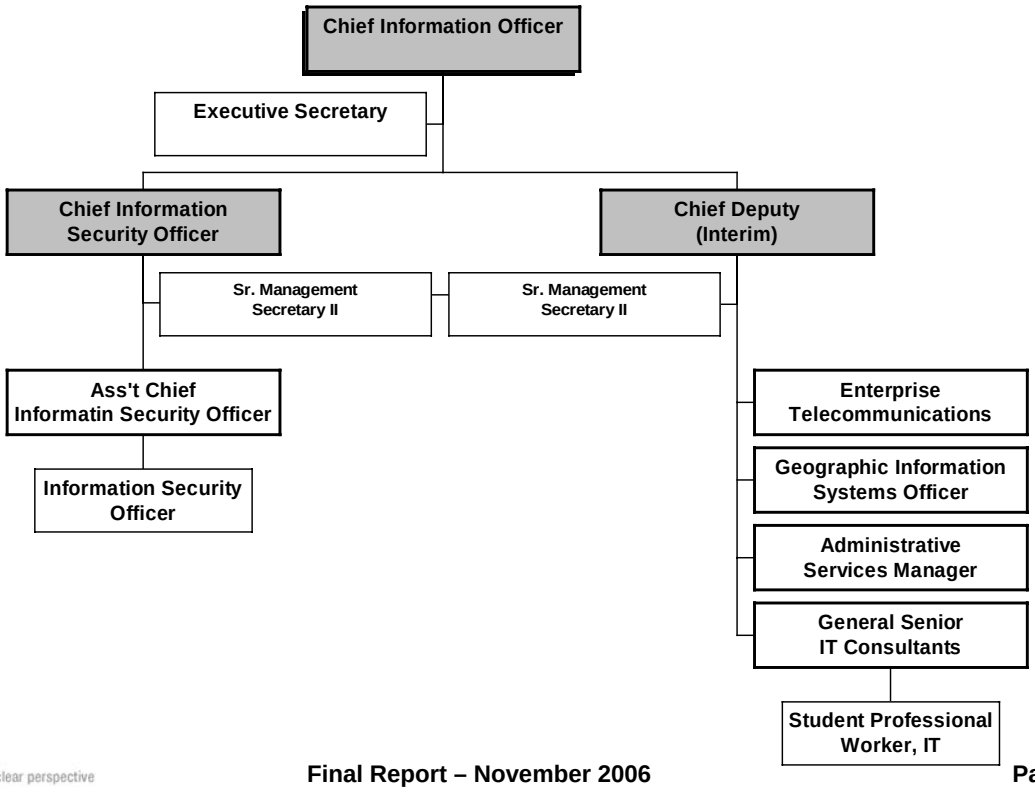
Although the trend in the IT industry is for centralized functions, such as data centers, the County is currently a decentralized organization. In addition to the centralized aspects of the CIO, the County also has centralized some IT operations in the Internal Services Department (ISD), which includes the previous Information Technology Services Department. (References to ISD in this report specifically refer to the Information Technology Services section of ISD.)

ISD, the other department with centralized responsibility for IT, is responsible for technical operations for certain County departments and, as such, operates the data systems for those departments. In addition to these responsibilities, ISD is a key provider of technical services.

Organization of the CIO

Since its creation in 1995, the CIO has steadily grown in responsibility, staff and budget. Starting with a minimal staff of 14, it has grown to an authorized staff of 20 full-time, regular employees. Currently, there are three Associate Chief Information Officer vacancies.

Exhibit 3: Chief Information Office FY 2006-207 Organizational Chart



The department is organized functionally into two groups. The first group, led by the Chief Information Security Officer (CISO), is specifically responsible for establishing Countywide security strategy, policies, and standards. The second group, led by the Chief Deputy Director CIO, is responsible for a wide range of activities including: setting general policies, standards, and strategies; acting as liaison to the County departments, monitoring department level IT projects, directly managing various enterprise-level IT projects, and the IBAP process. Further, this group is the center of expertise for the Business Intelligence and Geographic Information Systems initiatives.

The CIO's proposed budget for 2006-2007 is $4,359,000 up from the previous year's $4,102,000; an increase of 6.6%. Staff size has increased from 16 in 2004-05 to 19 in 2006-07. Budget increases have largely been driven by the creation of the Chief Information Security Officer Group, outside contracting for the IBAP process and personnel to support the Geographic applications initiative.

D. Report Organization

The Draft Report is presented in seven chapters:

I	Executive Summary
II	Introduction (this chapter)
III	CIO Governance and Organizational Placement: Findings and Recommendations
IV	CIO Role in Countywide IT Planning: Findings and Recommendations
V	CIO Role in major Technology Projects: Findings and Recommendations
VI	CIO Relationship with County Departments: Findings and Recommendations
VII	CIO Role in Establishing IT Standards: Findings and Recommendations

In addition, the following appendixes provide additional information:

A	List of Documents Reviewed and Personnel Interviewed
B	Survey of County IT Personnel and Various Results
C	Survey of Personnel in the CIO

III. Governance and Organizational Placement

A. Introduction

This chapter presents blueCONSULTING's findings and related recommendations concerning the governance and organizational placement of the CIO function for the County of Los Angeles.

IT governance at its most basic is the process of making sound business decisions about IT. How decisions are made, who makes the decisions, who is held accountable, and how the results of decisions are measured and monitored are all parts of IT governance. IT governance is an integral part of enterprise governance and consists of the leadership, organizational structures and processes, accountability and funding that ensure that the organization's IT sustains and extends the organization's strategies and objectives. Good IT governance ensures that IT investments are optimized, aligned with business strategy, and deliver value within acceptable risk boundaries, taking into account culture, organization structure, processes, maturity and strategy.

The CIO, alone, cannot ensure the successful implementation of information management needs. Rather, the CIO must be buttressed by the full support of department heads, the commitment of line managers, clearly defined roles and responsibilities, effective measures of performance, highly skilled and motivated IT professionals, and many other factors. Typically, an IT Steering Committee (involving the CIO and senior department managers) is established that sets priorities for IT initiatives and assigns ownership for IT-enabled business opportunities.

Implementing a good IT governance requires a framework based on three major dimensions:

- Structure—What structural entities will be created? Who makes decisions? Where are budgets allocated? Who will assume what roles and responsibilities?
- Process—How are investment decisions being made? What are the decision-making processes for planning, execution, support and monitoring?
- Communication—How will the results of these processes and decisions be monitored, measured, improved and communicated? What mechanisms will be used to communicate IT investment decisions to the Board, executive management, IT management, employees and others?

Organizations that pay attention to IT governance issues and have a senior IT steering committee that includes directors and key management people, have far fewer problems and get much greater value from their IT investments. Part of getting value, and being able to measure what you are getting, is identifying the right kind of measures that can be used to monitor IT performance from a senior management perspective.

B. Best Practices

blueCONSULTING used the following best practices to evaluate governance, management, and organization structure and placement of the CIO function:

- **Structure**. A function should be organizationally placed to optimize its effectiveness based on the appropriate level of authority required to accomplish its strategic purpose. Organizational placement refers to the optimal location of the CIO, i.e. whether it should remain independent or included within another department within the County. The location of the organization depends in large measure on the level of authority needed to accomplish their goals. Organizational structure describes the formal relationships that exist between different individuals, functions, and activities.
  - Where feasible, entire business processes should be "owned" by one person for increased accountability, while intermediate levels of ownership that do not add value should be avoided.
  - Best-of-class organizations recognize the value of strong centralized IT governance in key technology functions that support the enterprise by addressing strategic alignment, performance measurement, risk management, standards, project management and resource management.
  - Best practices calls for a strong CIO who reports to the highest executive level with the authority and accountability for developing a Vision, Strategy, and tactics to support the IT function. It is now common for the CIO to have a central organization which can either deliver on strategy or significantly facilitate the delivery.
  - Core functions like data center management, telecommunications, procurement, project management, planning, and security are centralized. Commonly, the organizations supporting these disciplines are directly or indirectly controlled by the CIO.
    - The centralization of these functions is driven by cost reduction/containment, organizational focus, and personnel optimization.
    - Business analysis and development functions often exist at the department level so they can be more responsive and knowledgeable about departmental needs.
  - Best-of-class organizations have an IT Steering Committee, with representatives from key departments, which assist the CIO in determining how best to focus enterprise IT resources by:
    - Reviewing and endorsing the overall IT budget.
    - Reviewing and endorsing the IT strategy
    - Setting priorities, particularly for enterprise-wide projects.
- **Process**. Best practices call for organizations with clear and widely understood processes for a wide range of functions including new project development, project management, budgeting, personnel management, and software/hardware acquisition, maintenance and support. In these organizations their processes are so well defined that there is no doubt as to roles and responsibilities. Additionally, the process used for measuring performance is clear and well understood.
- **Communications.** This dimension is really a characteristic of good process, but is so important that it should be highlighted separately. High-performing organizations have a complete and comprehensive plan for communicating. Process steps, methodologies, and status are readily available to those stakeholders who have a legitimate right to know. Organizations are using all available technology to make the information available.

C. Findings and Recommendations

Finding #1 County of Los Angeles' IT operations and governance structure are fragmented and decentralized.

There is no entity, other than the Board of Supervisors, that is responsible for reviewing or ensuring the appropriateness and cost-effectiveness of the entire IT budget and function within the County. The IT budget in excess of $650 million is therefore reviewed and approved in parts, and not as a whole, and the effectiveness and appropriateness of that substantial expenditure is not known.

Each department is responsible for the operational success of IT and for managing any projects that benefit that specific department. For large departments, that responsibility falls appropriately to the departmental CIO. Each department is responsible for making IT decisions, establishing the priority of the various projects and initiatives within the department, and in managing the limited resources within the department. This is in line with the accountability management philosophy of the Board of Supervisors to hold each department head accountable for strategic direction and operational effectiveness of their department. Each department has the authority to develop their own IT expertise, utilize the IT services of outside vendors, or use the services of ISD to assist them in their IT needs.

It is the job of the CIO to provide a level of oversight on IT procurement and operations for the Board. They review and provide a formal recommendation on those items that go to the Board for approval. Their job is to ensure that the departmental projects are in general alignment with overall County strategies, applicable County IT contract provisions, and to review the overall cost-effectiveness and major risks of the request. But these reviews and recommendations are project specific and do not address the central coordination or management of the County IT function.

The current decentralized model has created new technology business risks and new information security exposures due to the challenges of coordinating practices across the separately managed IT organizations of each department. Additionally, a decentralized approach to operational responsibility for IT leads to the duplication of many functions such as personnel skill sets, data centers, networks, email or web content, project approaches, etc. Finally, there is no effective and on-going performance measurement process that allows the Board of Supervisors (or other governing body) to understand, at any point in time, how effective the overall IT processes are for the County or how cost effective IT solutions have been. For example, there is a lack of quantifiable and meaningful metrics and benchmarks that clearly quantify and monitor effectiveness of the IT investments in the areas of cost reduction, quality, productivity, performance and responsiveness.

Finding #2 The effectiveness of the CIO is impacted more by the existing governance structure than the organizational placement of the function.

The effectiveness of the CIO is impacted more from the lack of authority than by the organizational placement of the office in the County's decentralized organizational model. For example, the CIO, in addition to providing general oversight, is accountable and responsible for developing and implementing standards even though the CIO has little authority to do so and

must rely on either the general agreement by the departments or a policy mandated by the Board. Additionally, as will be discussed later in this report, the CIO lacks the authority and resources to manage essential enterprise initiatives or projects, or even to provide an effective monitoring of those projects.

Some IT functions are of such strategic importance to the County, as a whole, that the County needs to recognize the need for a more directed, or centralized, governance focus. These IT programs or functions include the following:

- Project monitoring.
- Standards, including security.
- IT strategic planning.
- Enterprise projects.
- Shared Services.
- Data warehousing.
- Data Center consolidation.

There are opportunities for improvement in each of these areas, most of which will be discussed throughout this report. For example, as will be discussed later, project monitoring has not succeeded primarily because the CIO has not required departments to provide timely and accurate project information to track project progress, and standards development and implementation has not been totally effective because many departments view standards as "suggestions" unless they have been formally accepted by the Board of Supervisors. Enterprise projects and shared service projects also have project management challenges, which will be discussed later in this report, which are directly related to the decentralized governance of those projects. Formal mandate for achievement of these projects and programs that should be considered outside the specific accountability of individual departments is warranted.

The Board is really the only body that has governance authority over IT, other than individual department heads for their own departments. The roles and responsibilities of the CIO have evolved, out of necessity, to more of an operational or tactical function and have focused less on the overall strategic direction of IT. Although not specifically identified as his responsibility and without direct authority, the CIO has responded to Board inquiries and directions and has taken on additional responsibilities such as attempting to monitor all projects within the County and even provide project management of specific projects. However, without adequate authority, and the proper skilled personnel, the effectiveness of the CIO is questionable. For example, the CIO believes the Board views it as his responsibility to understand if a project is failing, to identify the problem projects and to take action to salvage failing projects. Some of these are undertaken to fill a void within a department and some are undertaken to address the specific needs or requests from the Board. However, as discussed later, the CIO Office has not been totally successful in those endeavors.

There is a clear understanding within the County that the various departments are primarily responsible for project management and that the CIO has oversight responsibility. Although there are numerous committees and advisory bodies dealing with IT related functions, there is no

governance or steering committee that controls IT roles and expenditures throughout the County. Out of necessity, the CIO has accepted certain governance roles such as recommending project funding, development and communication of IT strategy, and performance measurement of project deliverables.

However, there is no effective governance for centralized, strategic functions, and the CIO has no formal authority for project management or monitoring, or other areas of oversight. The departments perceive that the CIO does not have clear authority to make change happen and, instead, has to influence, encourage and convince. This potentially leads to a lack of overall oversight in important areas. This lack of clarity in authority and accountability leads to confusion within the County on the roles and responsibilities of the CIO and other IT organizations within the County.

Recommendation #1. **Establish a Governance Model with an IT Steering Committee, potentially as part of the County's Guiding Coalition, led by the CIO which would be tasked with creating a charter and scope of authority to address these issues, before considering the need for alternative organizational placement of the CIO function. (applies to Findings 1 and 2)**

Establish a governance model that inserts an additional level of oversight into the IT process and allows the Board of Supervisors to address only the most strategic and far reaching IT issues, rather than focusing on IT operational tactics such as specific technology and product standards approval. This increased focus on an appropriate governance model is of greater importance to the effectiveness of IT within the County at this time than is the organizational placement of the CIO position. (Since blueCONSULTING did not sufficiently review the CIO relationships with ISD and other IT organizations, we have not made a recommendation to change the organizational placement of the CIO. The existing placement conforms to best practices and may be sufficient if the recommended governance structure is implemented.)

An enhanced governance model would establish a three tier governance process with accountability divided between the CIO, the IT Steering Committee, and the Board of Supervisors.

An essential task of the proposed IT Steering Committee is the development of a proposed charter that recommends to the Board assignment of authority and accountability between the three tiers of the governance model. The tiers are intended to illustrate the general level of involvement to avoid overlap and confusion.

The three tiers of the governance model should then cooperatively:

- Drive IT Countywide strategy development and execute against it, ensuring measurable value is delivered on time and within budget.
- Develop and implement IT standards.
- Educate Board of Supervisors, their staffs, and department heads on IT related costs, technology issues and capabilities.
- Strengthen the link between IT budget allocations to strategic goals and objectives.
- Establish strong IT project management disciplines Countywide.
- Ensure the availability of suitable IT resources, skills and infrastructure to meet strategic objectives.
- Standardize architecture and technology Countywide.

- Ensure day to day management and verification of IT processes and controls.
- Manage organizational expectations relative to IT through effective structured communications.

Departmental CIOs, which exist primarily in larger departments, are useful in fulfilling these roles for their department and should continue to be employed in those departments.

The IT Steering Committee must also review and determine the feasibility, scope and ranking of the following objectives of this recommendation:

- Increase and clarify the authority level for the CIO in the areas of enterprise projects and shared services, all project monitoring, performance measurement and reporting, standards implementation, strategic planning, and all oversight responsibilities.
- Decide on the overall level of IT spending and how costs will be allocated for enterprise IT projects and initiatives and standards.
- Approves and prioritizes enterprise project plans and budgets, setting priorities and milestones.
- Monitors resource and priority conflicts between the departments and between projects.
- Makes recommendations and requests changes to strategic plans in terms of funding, priorities, technology approaches, resources, etc.
- Ensures enterprise projects continuously meet business requirements.
- Follows progress on major, enterprise IT projects and initiatives.
- Monitor and directs key IT governance processes.

Subject to the consideration of the IT Steering Committee in drafting their proposed charter and its approval and delegation of authority by the Board, the Committee's general responsibilities related to this Study, could include:

- Review and approve an enhanced County IT strategy prepared by the CIO. (See Chapter IV—CIO Role in Countywide IT Planning.)
- Review and rank Countywide technology projects, based on their concurrence to County strategic goals, and recommend adequate resource deployment. (See Chapter V—CIO Role in Project Management.)
- Approve IT standards for mandatory implementation by County departments. (Also see Chapter VII—CIO Role in Establishing IT Standards.)
- Review the need for and, if applicable, work with the Chief Administrative Office to identify recommended funding for an Enterprise Initiative and Standards Fund (discussed later in this chapter) to support implementation of important projects and standards in all departments.
- Review staffing of IT functions throughout the County and within the CIO.
- Oversee the organization and functions of a Project Management Office and subject matter experts recommended later in this report.

The final essential component of the three-tier governance model is the responsibility of the Board of Supervisors to approve the overall strategy for the County and ensure that the County is receiving value from the IT investments. Specifically:

- Direct the alignment of IT strategy with business departmental goals.
- Ensure that management has put in place an effective strategic planning process.
- Ensure the IT business model compliments the business model and direction.
- Monitor how management determines what IT resources are needed to achieve the IT strategy.
- Be aware of IT risk exposures and their containment.
- Work with executives to define and monitor high level IT performance.

The new IT Steering Committee could be established as a subgroup within the Guiding Coalition Committee and function as oversight for County IT operations and governance.

Note: The County should further study the appropriateness of increasing the centralization of IT functions after clarifying the IT governance structure. While blueCONSULTING believes that additional benefits from centralization are feasible, especially in terms of data centers, networks and security, we do not recommend in this report the complete centralization of all IT functions since we have not had the opportunity to adequately review other IT organizations. Although further study the centralization of many IT functions is recommended, some of the same benefits of centralization can be obtained by mandating an increase in the authority of the CIO without disrupting the County structure or culture.

Finding #3 IT budgeting and funding is decentralized, favoring departmental solutions over Countywide, shared solutions.

Given the decentralized nature of IT operations in the County, it is the responsibility of each department to fund their own projects that would benefit their department. Additionally, it is their responsibility to fund the implementation of identified standards or to contribute to the funding of identified enterprise solutions or projects. While this may be appropriate and not an issue for large departments, many of the smaller departments commented that it was very difficult for them to participate or implement the standards identified by the CIO.

The Board of Supervisors established the Information Technology Fund (ITF) in 1998. The ITF is managed by the CIO and is intended to "provide financial and technical resources to County management allowing them to explore present and emerging technologies to improve service delivery and organizational effectiveness." The fund's Fiscal Year 2004-2005 budget was $22,482,000 of which $14,676,000 was committed. Unused monies may be carried over to future years. Supported projects vary significantly in size and scope. The ITF Annual Report is presented by the CIO annually to the Board of Supervisors to provide visibility and the status of funded projects. While the ITF is a good model for centralized funding, it is focused on funding one-time cost for departmental projects that improve access and the delivery of service to the public or staff.

Recommendation #2. **The County should consider alternative funding approaches, including the development of an Enterprise Initiatives and Standards Fund. The proposed IT Steering Committee, in concert with the Chief Administrative Office (CAO), should develop a recommended funding model for the Enterprise Initiatives and Standards Fund for inclusion in the County's Fiscal Year 2007-2008 budget.**

Essential standards and enterprise projects need to be implemented regardless of an individual department's ability to fund them. A centralized Enterprise Initiatives and Standards Fund would ensure that County IT priorities (as well as specific departmental IT priorities) would be funded and implemented in a timely and consistent manner, thus increasing the overall effectiveness of IT within the County. Providing this funding, with the requisite monitoring and reporting of expenditures, would be a giant step in achieving oversight on and control over a significant portion of the expenditure within the County IT budget.

The recommended Enterprise Initiative and Standards Fund would have to be substantial in order to accomplish its goal. A funding approach would have to be developed that would be fair to all departments. Use of a centralized fund would require a focus on priority of enterprise projects and allow greater measurement of effectiveness of IT expenditures within the County. The projects covered by this fund could potentially include Websphere, security, standards implementation, shared services project management training and implementation, and other strategic priorities that would benefit from timely funding, increased visibility and communication of expenditure and results Countywide. However, it would not impact the funding of specific projects within a department that would continue to be prioritized based on the need of each specific department, thus continuing to meet the overall accountability philosophy of the Board of Supervisors.

IV. CIO Role in Countywide IT Planning

A. Introduction

The County of Los Angeles has developed and maintains a five year Strategic Plan which was updated as recently as 2005. Explicit in the charter of the CIO is the responsibility to develop and communicate a Countywide IT Strategy. To comply with this requirement the CIO established the Integrated Business Automation Plan (IBAP).

Each year, in November the CIO and the CAO distribute Budget instructions for the coming fiscal year. The instructions for the development of the BAP are distributed directly to the Departmental CIOs or IT Managers and the BAP Instructions are included as part of the formal Budget instructions. A formal informational/training session is held by the CAO and the CIO to review the new Budget and BAP instructions. The Budget instructions require each Department submit a Departmental BAP with their budget submission. Because of the number of Departments' budgets and BAPs to be reviewed the due date for budgets is staggered from early January through the end of February. Budget meetings are held with each Department to discuss their requests and any IT issues or projects of strategic importance, prior to the publication and submission of the proposed Budget.

By this phase, all department BAPs are to minimally have the following sections:

- Discussion of their Department's strategic direction.
- Discussion of the three-year views on the direction of departmental IT.
- A self assessment of the strengths and weakness of their respective IT organization.
- High level portfolio assessment.
- List of projects with funding & labor estimates.
- IT asset inventory.
- IT budget.
- IT contract budget.
- Long-range IT spending projection.

According to plan, after budgets are approved in June, the CIO integrates and finalizes the final department BAPs into the IBAP which should be published in October, when the cycle starts all over again. In reality, the 2005-2006 IBAP was published in February 2006.

The IBAP is a good product. As stated in the Executive Summary, "The Integrated Business Automation Plan (IBAP) is an annual report of major departmental and enterprise-wide IT activities for the County of Los Angeles (County). This report provides a framework for understanding and evaluating the use, management and deployment of I/T resources. The IBAP highlights the progress made toward meeting the goals and objectives outlined in each departmental business automation plan (BAP), and describes each department's accomplishments during the prior fiscal year. It also identifies strategies for implementing major

countywide initiatives, identifies emerging technology trends, and provides an analysis of I/T financial and inventory data."

In general, the IBAP consists of six chapters and three appendices, as briefly described below:

- Chapter I provides an Executive summary of the IBAP plan, metrics, strategic direction with goals, objectives and accomplishments;
- Chapter II discusses the County IT Environment including the BAP Planning Framework and the BAP planning cycle, defines the functional categories (used during the Survey of IT personnel—Chapter VI), presents IT budget and staffing data and information; and discusses contracts and enterprise computing assets and standards;
- Chapter III provides the Strategic Directions and lists goals and strategies with direct linkages of individual projects to the County Strategic Plan. According to the CIO, this section has been the key mechanism to organize and communicate Countywide IT Strategy.
- Chapter IV describes the major IT projects and initiatives in detail and summarizes the linkage between these projects and initiatives with the Countywide Strategic Goals. For each project, the list of primary customers, participating departments, project status and project benefits are provided.
- Chapter V discusses the previous years IT accomplishments by Department.
- Finally, Chapter VI identifies the current fiscal year IT initiatives an objectives, also by Department.
- Appendix A discusses the IT Strategic Direction and lists goals, strategies and tactics in support of the strategies.
- Appendix B provides the Strategic IT Project and Alignment Tables showing how each IT project aligns with County Strategic Goals and with Local Government Strategic IT Trends.
- Appendix C provides the Preferred Enterprise IT Standards and Recommendations

The Integrated Business Automation Plan for the County of Los Angeles was developed by the CIO as a method to share information Countywide on a variety of IT issues and areas. The evolution of the IBAP has been substantial over the last several years and the CIO should be commended for the development, enhancement and publication of the document. However, it is not sufficient or effective as an IT Strategic Plan for the County.

B. Best Practices

Best of breed organizations have IT Strategic Plans which are continuously maintained and adjusted to support and facilitate enterprise strategy. The characteristics of these plans are that they are:

- Multi-year in scope – three and five years are most common (three is probably most appropriate for technologically fluid environments).
- Updated annually – retire the current year discussion and completed goals, refine the remaining years and add a new "last" year.
- Aligned with the business needs of the County.

- Not directly actionable – strategies require translation into tactics and projects.
- Measurable – clearly indicated when they should be accomplished.
- Time-based – all tactics and projects should have start and completion dates.
- Effectively communicated-- Communication of the IT Strategic Plan is a critical component to best practices. All Strategic Plans must have a comprehensive communications plan which specifically calls out how all stakeholders (i.e. the Board of Supervisors and the Department heads) will be apprised.

C. Findings and Recommendations

Finding #4 Although the IBAP provides a good product, it is insufficient as a comprehensive Countywide IT Strategic Plan.

The Office of CIO has referenced the IBAP as the County wide IT Strategic Plan with Section 3-Strategic Direction of the IBAP as the default IT Strategy. While Section 3 of the IBAP has some of the necessary components for a good strategic document, it lacks several of the desired characteristics.

While the IBAP lists the various goals and strategies, it does not provide a vision for achieving each or a measurement for identifying accomplishment. For example, the IBAP provides strategies such as "Promote use of electronic communication" or "Provide Secure Access to Electronic Applications" or "Develop a technology infrastructure that provides secure data access". These are admirable strategies but there is no vision presented by the CIO of when the CIO expects to achieve these strategies, no goals for Countywide accomplishment, or any measurement provided to know if and when the County has achieved the strategies. The IBAP does not provide or discuss the overall vision for implementation of those strategies within the County. When does the CIO expect to achieve these strategies? Has the CIO established a "goal" for achievement? Is it desired that these strategies apply to the County as a whole, or to a portion of the County? How does the reader know whether the County has achieved the strategy, or whether the achievement was cost effective? There is no overall vision for the County to aim for in terms of timing, accomplishment or measurement of each strategy. Additionally, there is no accountability in the form of who is responsible for accomplishment. A strategic plan without an assignment of accountabilities or measurement of success is insufficient.

The weakness of the IBAP as the Strategic Plan is recognized within the County. Several responses to the department survey conducted by blueCONSULTING, in combination with interviews, indicate confusion and/or concern over the lack of a clear Countywide IT strategy. Comments and concerns expressed in the ratings and quotes from the Survey and during interviews with blueCONSULTING are noted below: (See Chapter VI and Appendix B, Subjective Responses)

- Department Survey Question 5—"The office of the CIO is effective in developing a Countywide IT Strategy" received a rating of 3.76 (out of 5).

- "I'm not sure that the CIO's vision for County IT is well understood. It is presented in the BAP instructions and in formal presentations such as the TSAB meetings, but there is precious little of the routine continuing conversation about the CIO's vision that might lead to deeper understanding. I think that there is no particular antipathy to talking between departmental CIOs and the County CIO, but there is a crushing workload on both sides and no formalized opportunities to create that conversation."
- "As a result of the various departments' BAPs, (the CIO should) make a clear strategy each year that supports the overall goals of the various departments and make this plan clear to department CIO's but especially department heads. It is not always clear what enterprise efforts are targeted each year and the target for each. This would help each department to better plan their own efforts."
- "More emphasis on formal strategy and building partnerships with departments would help in the success of Countywide initiatives."
- "The IBAP is ineffective as a strategy document because many people do not read it. A clearer presentation of IT Strategy is desired."

Subjective comments from blueCONSULTING's department surveys and interviews indicated that there is a lack of understanding at the department level of Countywide strategies. This is because no formal communications plan exists which would identify responsibility, frequency and methodology of communicating the IT strategy to the stakeholders. For example, Department Survey Question 6—"The office of the CIO is effective in communicating the County's IT strategy" received a rating of 3.70 out of 5.

The absence of a published, comprehensive, well-communicated, and open IT strategy leads to:

- Uncertainty and inconsistency in the direction of IT at all levels
- A lack of focus in the allocation of the 2005-2006 $625 million IT expenditure
- The rationalization of projects to fit the strategic goals.

Recommendation #3. **Develop a separate IT Strategic Plan, present it to the new IT Governance Committee for input and approval and then communicate it throughout the County.**

Although "Section 3 – Strategic Direction" of the IBAP could be enhanced to provide a meaningful IT Strategic Plan, it would be more effective if the CIO developed and published a separate Countywide IT Strategic Plan and submit that plan for approval by the new IT Governance Committee. Developing such a plan would have several benefits. A Countywide IT Strategy should provide all levels of IT with a roadmap for supporting County Strategic Goals and provide a broader IT vision for the County with measurable metrics for progress. The Plan should not specifically define department-level strategy, but provides the framework to guide the development of strategy by each individual department. As well, a Countywide IT Strategy will tend to eliminate hidden agendas and implied, but not expressed, strategic directions. Specific strategies which should be addressed include:

- Information Technology Strategy—the core strategic orientation of the IT organization and reflected in all other sub-strategies;
- Operating Strategy—addresses how day-to-day and project work is determined and performed;

- Human Resources Strategy—determines desirable employee/organizational characteristics with training, organization and compensation considerations;
- Relationship Strategy—the basis for interaction between internal and external entities including other departments and vendors;
- Enterprise Linkage Strategy—the connection with County leadership and hierarchy, including the IT Governance Committee.

Since the IBAP is perceived as an integration of Departmental level Business Automation Plans, it is not considered by many department heads as the official IT Strategy for the County. The IT Strategic Plan should be effectively communicated to County management and department heads, separately from the IBAP.

Finding #5 Although a good process that has been substantially improved over the past several years, the IBAP process needs additional enhancement and improvement.

The IBAP is a good process and product that has many useful aspects:

- It consolidates and gives visibility to all IT projects and initiatives.
- It attempts to begin to align the departments programs with the County strategies.
- It reports both the status of IT projects and initiatives in one document.
- It is a good vehicle for project specific reporting to the department heads and county management.
- It is the result of a continuous improvement process and has been enhanced each year.

In spite of these positive aspects, both blueCONSULTING and the CIO recognized several weaknesses in the IBAP process. In fact, the CIO has already engaged an independent consultant, Pacific Technologies Inc. (PTI), to recommend an improved IBAP process. Two areas that were not mentioned, however, is the need to use meaningful benchmark metrics to indicate the overall cost-effectiveness of the County IT approach and to discuss and describe how the various projects link to the County Strategic Plan, not just the fact that they do link. Metrics currently in the IBAP are meaningful as measures but may not be comparable for government functions similar in function or size to the County of Los Angeles. The CIO should ensure appropriate comparable metrics.

After studying the IBAP process in detail, PTI's key recommendations are:

- Simplify the BAP format to focus on essential information and eliminate redundant narrative.
- Develop BAP software which addresses user issues, streamlines data collection, and generates a pre-populated BAP document which needs only brief narrative added.
- Modify the BAP timeline so that project planning can influence the budget. A draft BAP is submitted with the budget request, and the BAP is finalized based on the approved budget.
- Separate the asset management data collection process from the BAP process.
- Separate IT project-related information from operations and maintenance data.

- Create standard templates to support departmental IT planning (e.g. project request, scoping document, business case, etc.).
- Increase communication between the CIO and departmental staff.
- Build on the existing BAP to support performance measures with more detailed IT labor and asset information.
- Develop a repeatable set of high-level IT performance metrics (based on comparable entities).

blueCONSULTING agrees with these recommendations to increase the effectiveness of the IBAP. The recommendations were presented on July 19, 2006 and are in the process of being reviewed. If PTI's recommendations are implemented in their entirety, the IBAP would be much more meaningful and would enhance the development of an enhanced IT strategy document, recommended previously.

Recommendation #4. **Implement the recommendations from Pacific Technology Inc. (PTI) to enhance the effectiveness of the IBAP process for the County. Provide PTI with the findings and recommendations in this report for updates and expansion of the IBAP.**

V. CIO Role in Major Technology Projects

A. Introduction

Ownership and management of the County's Information Technology (IT) projects and initiatives are typically decentralized in various County departments. These initiatives generally fall into one of several categories: enterprise or cross departmental, department application, and regulatory. Projects are initiated by several different sources including the Board of Supervisors, CIO Office, ISD and County departments.

The CIO has assumed project management responsibility for selective IT projects, even though this is not explicitly called for in the County Charter. The CIO's project management role may take on several different forms from a full project management role to a lesser role of project oversight and management support on selected IT initiatives Countywide. The project management role is normally assumed for enterprise technology initiatives or projects that are considered enterprise or Countywide affecting many or all departments (i.e., Voice over IP).

The associate CIOs, as part of their liaison role with their assigned departments, monitor department IT projects and, if the project is running into problems, provide oversight, management support, and project management resources when necessary. The CIO provides "oversight" on IT projects and initiatives with County departments by becoming aware of the project/initiatives, having a reasonable understanding of the scope, desired timeline, planned or considered technologies, and inter-departmental involvement. They typically provide "project support" by taking a hands-on role in completing, or assisting with the completion, of some aspect of the project or initiative. An example would be the development of or re-writing some part of the Request for Proposal, developing or participating in the development and/or negotiation of a contract, etc.

The total number of County IT initiatives was not easy to derive due to the decentralized ownership, direction and control of departmental projects. There were however, several sources we used to identify the project inventory and assist in the selection of projects for our review.

One source was a report titled, "Summary of CIO Support of Department Projects" provided to blueCONSULTING by the CIO. This was developed by the CIO primarily for the purpose of our review and is not a production report. A recap of this report indicated that there were 119 total projects where the CIO associates had oversight responsibilities, project management responsibility for 16 projects, and management support responsibilities for 78 projects. The source of data was taken from various project lists and did not include any budget information, status, or milestones.

Another source of project inventory is the "Information Technology Tracking System" (ITTS) which was developed and implemented in April 2004 to track projects across all County departments. Further refinements and modifications were made to the application through October 2005. There was no correlation between the "Summary of CIO Department Projects" and the ITTS system other than some of the project names were reflected on both lists.

ITTS tracks key project milestones, budget and general status information. The system automatically flags projects that are over budget or behind schedule based on predetermined criteria and provides a color coded key to status. Safe Status or "Green" means that the project is on time and on budget, Caution Status or "Yellow" means that the project milestones are slipping and Critical status of "Red" means that the project is behind schedule and/or over budget, and "Not Activated" means that updates are not available.

Participation in the system by the departments is encouraged by the CIO, but not enforced. There were only 47 projects in the ITTS as of August, 2006 representing input from only 16 departments. It was clear that the system was not being populated by the CIO, or other County departments.

While the intent of ITTS was to assist Department management and the CIO to have visibility of the IT projects within their respective Departments; it also provides monitoring visibility across County departments. The ITTS provides a repository to track critical project milestones, budget and key deliverables; however, it is ineffective in that goal if all projects are not required to be listed. Although a user guide was completed in February 2006 and distributed to the County Departments, the requirement to keep the system up to date has fallen short and departments, including the CIO, look at this as just another administrative task which in some respects is redundant to their own project planning activities and tools. This diffuses the accountability of the CIO.

B. Overview of County Major Technology Projects

blueCONSULTING employed a two-pronged approach for reviewing the available inventory of IT projects and initiatives. First, a general review of the project inventory and governance around the initiation, approval, and prioritization and tracking of projects was conducted through interviews with various CIO associates.

Second, a review of a project sampling through interviews with key project staff internal to the CIO and at the departmental level. The projects selected for review (shown in Exhibit 3) represented a cross-section of enterprise and department initiatives where the CIO either has direct project management responsibility or provides general management support and/or oversight.

These projects have either been initiated by the CIO or support has been requested by the department to assist and lend expertise to achieve specific project milestones. A high level review of the ITTS project tracking system and individual project inventory documents were reviewed to understand the tools in place that the CIO office uses to monitor the Countywide project inventory.

Projects were reviewed at a high level through interviews with the responsible project manager both internal to the CIO and with key management staff from the primary department. Discussions focused on scope, key milestones, schedule, governance to help assess the role and effectiveness of the CIO. This review was intended to highlight methodology, governance and resource management concerns that are vital to the successful on-time completion of projects. Note: This was not intended to be a detailed project evaluation but serve to underline key

planning and process issues that may be systemic across the County.

These projects span a wide range of technologies. (Application, Desktop support, Communications, infrastructure, service delivery and Data Warehouse) and are both enterprise wide and/or department specific.

Exhibit 4: Targeted County Projects / Initiatives for Review

Department	Project Name	CIO Role
Auditor-Controller	eCAPS	Management Support
CIO Security	Countywide security Program (1)	Project Management
ISD	IT Shared Services	Management Support
Dept of Public Works, others	eDAPTS	Project Management
Sheriff	Enterprise Asset Management	Management support
Public Library	Integrated Library Information System	Oversight
ISD	Voice Over Internet Protocol	Management Support/Oversight
Department of Public Social Services	Data Warehouse	Management Support/ Oversight

(1) See Chapter VII-CIO Role in Establishing IT Standards.

A brief description of each project reviewed is provided below.

"eCAPS" – Enterprise Initiative -The County entered into an agreement with CGI-AMS (Software/Implementation Vendor) to upgrade the County's legacy financial system. The project was labeled "eCAPS" Electronic Countywide Accounting and Purchasing System. The implementation plan identified a phased implementation.

Phase I implemented general ledger, accounts payable, accounts receivable and Cost/Project/Grant accounting which was completed in July, 2005. Phase I was completed on time and within budget. During the initial months of the Phase I implementation a number of departments identified critical needs for additional functionality that are within the Financial and Human resource modules.

This functionality is now being implemented as Phase II of eCAPS, including, Procurement, Inventory and Fixed Asset, Budget Preparation, Time Collection and the design for Human Resource Management, and other legacy system replacement. Phase I of eCAPS was budgeted at $13.8 million and Phase II is budgeted at $37.3 Million. Phase II is comprised of five subprojects that are within budget and at various stages of completion. Project Plans for the Materials Management and Time Collection DHS sub projects have been revised by the eCAPS Advisory Committee to meet the County's Business needs.

The CIO management support/oversight role on this project includes sitting on the steering committee, and co-authoring status reports. The CIO has no specific task responsibility and basically serves in an independent validation and QA role. The Board of Supervisors is given written status but rarely gets involved. The Department of the Auditor-Controller is responsible to the Board for the successful completion of the project. The Auditor-Controller and vendor

established the project management methodology that will be used for project development and implementation.

Information Technology Shared Services (ITSS) – Enterprise Initiative - The ITSS service concept was conceived and developed by the CIO to provide critical support to small and medium departments. It is also driven by the need to gain control of the PC network, minimize the length and impact of downtime to the County for PC's connected to the network, improve service to the County departments and gain control of costs and to protect the County's enterprise network with the latest security updates.

The purpose of this initiative is to minimize the impact of downtime and protect the County's Enterprise Network by implementing the latest security updates and backing up data on a regular basis. Services included as part of this offering include Centralized Messaging, centralized desktop support and centralized Business systems support.

The Pilot was kicked off in April, 2006, providing support for the CIO and preliminary work to build the support organization within ISD is ongoing i.e. staffing levels, licenses, etc. The plan to migrate ISD is targeted for November, 2006. The Shared Services offering is focused on small to medium departments. There is not an assumption or plan at this time to serve every County Department. This initiative is being driven by ISD with the active encouragement of the CIO.

eDAPTS - Enterprise Initiative -The project began in June 2002 and focused on the Department of Public Works (DPW) departmental objective of streamlining land development permitting and inspections which are unique to individual departments. Individual departments added inspection functionality not directly related to the land development process. The project originally focused on DPW's department objective which relied on the vendor solution (KIVA) selected by DPW and provided by Accela (the software developer). The expansion departments joined the project in April 2003 to address land development permitting as well as their own departmental objectives, for example inspection functionally not directly related to the land development process. The project has been plagued by numerous schedule delays and budget overruns. COPLAN and Company was engaged to perform a project assessment which was completed in March of 2006. The study presented a comprehensive assessment of the Project with an extensive review of Accela issues, DPW issues and Countywide issues. The major project categories are listed below:

Accela Issues

The quality of the software along with the inability to deliver timely and complete deliverables were cited a major problem for the vendor.

DPW Issues

- Lack of single DPW project manager.
- Lack of consensus on requirements.
- Limited basis for DPW project schedule.

Countywide Issues:

- Incomplete project governance (lack of executive sponsor from each department).
- Lack of integrated project schedule.
- Lack of Countywide requirements.
- Lack of policy for application updates.
- Lack of single issues list.
- Absence of County risk analysis and mitigation plan.
- Limited effectiveness of project meetings.
- Insufficient County resources for application support.

The report and recommendations presented by Coplan were comprehensive and consistent with our findings discovered through the interview process with CIO associates and the Director of DPW. The general feeling of the CIO associate and the Director of DPW was that many recommendations should have been implemented at the beginning of the project and therefore only minor steps were taken to implement the recommendations. (See Coplan Project assessment 3/22/2006.) The best estimate now is a project completion sometime in 2007 or worst case 2008.

Enterprise Asset Management- Enterprise Initiative - The project started in December 2003 with the need to replace the Sheriff's Carver One Software which was the 20+ year old legacy system that inventoried County assets. There was no common system to track money spent against these assets (i.e. 546 buildings, etc.)

In June 2004 the CIO office got involved and provided management support to the project in an effort to look at this from an enterprise application. The scope of the project expanded to include other departments including DPW, Fire and Parks and Recreation. Requirements were then developed across the four departments.

The purpose of the project was to track County Assets and capture maintenance expenses against that asset. This will enable the County to better plan for maintenance; keep track of local stock of maintenance items that are used to operate the facility. i.e., air conditioning components, etc. The RFP is now being modified to reflect the Sheriff's plan to aggressively limit modification to the software, including only a small services component. No formal budget and project plan has been established. The CIO's office is providing assistance to ensure a successful solicitation process, procurement and implementation. Specifically the CIO associate is working to ensure that the business requirement meet County needs by hosting requirements meetings.

Over the past four months, the Sheriff Contract Unit is attempting to finalize the wording on the RFP. There has been some conflict with other projects in the Sheriff's department which may be the reason for the delay. The CIO associate will take on a consulting role on the evaluation committee

Integrated Library Management (ILS) - Departmental Initiative - The ILS is an enterprise wide business automation system which will support direct public and internal operations such as collection and customer management, acquisition of library materials, and management reporting.

The project research started in mid 2004 but began in earnest in June, 2006 and is in the Statement of Work phase with the contract scheduled to be signed in November, 2006. The Library is a special fund department and will not use the general fund for this initiative.

This new system will be a replacement to the mainframe library management system today and will replace the terminals at 85 facilities, over 2000 desktops with 1100 connected to the system via a web portal. According to the Assistant Director, a top consulting firm, who has experience in implementing this package, has been hired to manage the implementation.

The CIO associate is working in purely an advisory capacity throughout this effort with no direct project responsibility. However, the associate actively participated in the drafting of the Statement of Work for the agreement.

Voice over IP - Enterprise Initiative –The County has adopted Internet Protocol (IP) as its standard for Voice communications. IP telephones convert voice conversations into IP packets. IP telephony uses the Local Area Network (LAN) to switch the packet through the building and/or out to the public telephone network. Therefore, large PBXs are no longer required in the building. In short, IP telephony has the ability to integrate a user's phone, voice mail, and email into a unified message system controlled on the user's personal computer. In new installations there is significant cost savings by the elimination of voice cabling.

The RFI for VoIP was released in February 2004. An evaluation committee chaired by ISD was formed with 20 representatives from six departments. Cisco received the highest point total and was selected as the sole provider initially due to lack of interoperability between systems of different vendors. The evaluation sub committees and scoring process was discussed with the CIO associate and appeared to be logical, well conceived and executed.

A memo was sent to the Board advising them of the decision. To date there have been eight installations with over 2100 lines. Installations appear to have been successful with only minor delays. VoIP is becoming the de facto standard for the industry, as such the strategy has been adopted to replace old PBXs with VoIP when they reach the end of their useful life or to install VoIP for new facilities. Each installation is set up as a unique project and funded separately.

There have been discussions with the Board deputies regarding the strategy for VoIP but there has not been any formal communications to the Board covering the County's strategy. The reason why this has not been scheduled is unclear.

Data Warehouse - Enterprise Initiative - There was a Board Motion dated May 9, 2006 approving $500,000 in initial funding to develop the Department of Public Social Services (DPSS) Data Warehouse to consolidate reporting from various separate systems.

In the prototype, data was taken from several application systems, (LEADER, GEARS, CMIPS) and loaded into an Oracle Data Base and specialized reports were generated using the COGNOS business intelligence tool set. The results of the prototype were then reported back to the board before additional funding would be approved.

On July 12, 2006 the results were presented to the Board deputies who agreed that the prototype met their objectives. The project risks have been identified along with the risk mitigation measures. The project team is now developing mitigation plans for each project risk.

The Data Warehouse project is envisioned to be completed in three releases over the life of the entire project. The Board Letter , dated August 22, 2006 requests approval for the first release which includes the technical design and structure to support the data for the subsequent releases and ultimately comprise the entire data warehouse. Release two and three will include remaining data from LEADER, GEARS, MIIPS, DPSSTATS, and other systems.

The CIO is providing general consulting and sits on the steering Committee. Ten to twelve DPSS staff are currently being educated on the Oracle Methodology for the Database development and COGNOS for the business intelligence or reporting portion.

The project seems to be off to a good start with the intension to use this as a model for future data warehouse initiatives across the County.

In summary, the County has and will continue to invest heavily in new development. These projects are extremely complex and demand the proper funding, skills and governance to achieve the project objectives and optimize value for the IT investment. The following best practices highlight those disciplines that have been found in large organizations and government agencies that are considered "Best of Class" regarding major IT systems development at an enterprise level.

C. Best Practices

Four areas of relevant best practices found in "best of class organizations" are described below.

1. Project Management Office (PMO) as a staff function supporting the CIO. This was developed in response to complex project management requirements in larger organizations. The PMO manages the project portfolio and the project managers, sets and enforces project management standards, manages priority and resource conflicts, reviews deliverables and reports on consolidated project results. The CIO project management function has the opportunity to positively impact the bottom line of IT spending through the strategic management of IT project portfolios, better planning of projects and process standards.

2. Certified Project Managers (Project Management Institute, PMI) with the sole focus to actively manage the triple constraint of cost/budget, schedule, and functionality to achieve the project objectives. It is not a question of when the project will deter from its originally planned path but how quickly the project will track again against given project objectives. Certified project managers would reside within the PMO creating a center of excellence in the organization.

3. IT Steering Committee (involving the CIO and senior department managers) that sets priorities and allocates funding for IT initiatives and assigns ownership for IT-enabled business opportunities. This is an independent governing body for all IT

projects/initiatives Enterprise wide. This committee complements the CIO and has the authority make decisions over the following areas:

- Decides the overall level of IT spending and how costs will be allocated
- Approves project plans and budgets, setting priorities and milestones
- Define project priorities Countywide
- Monitors resource and priority conflict between the Departments, the IT function, and between projects.
- Makes recommendations and requests changes to strategic plans (funding, priorities, technology approaches, resources, etc.)
- Assess strategic fit of Proposals
- Ensures projects continuously meet business requirements
- Perform portfolio reviews for continuing strategic relevance
- Review, approve and fund initiatives
- Follow progress on Major IT Projects.
- Monitor and direct key IT governance processes

4. Project Management Methodology Standard -The objective of such methodology is to continuously focus people and other resources to achieve project objectives within time, cost and resource constraints. Such a project methodology could be adopted from the Project Management Institute (PMI), which divides the project management process into discrete sub-processes or could be developed from internal project processes and procedures.

    4.1. Project Resource Management – Almost every project is faced with chronic resource constraints. However, Best Practice PM organizations find and tap into enterprise-wide resources (and/or through external consultants) and subject matter experts to inject knowledge at critical junctions of the project. Project staff are dedicated to project activities and not distracted by maintenance and operational issues.

    4.2. Best practice Project Management Organizations understand and have mastered the need for constant review, measurement and alignment of projects along its life-cycle. This constant readjustment is commonly known as ‘iterative planning’ and is at the forefront of leading project management methodologies.

    4.3. Project Scope Management – Chunk large-scale projects into smaller discrete projects to manage scope. Apply a PMO to manage the portfolio of projects. Establish scope control mechanisms to define, plan and adjust (if necessary) project scope.

4.4. Project Quality Management – Plan for a Quality Assurance function that has the mandate to manage project delivery quality. This is a unique discipline and could reside in the PMO and responsible for QA of project deliverables against process and application standards. Best Practice companies assemble an independent QA Committee (internal & external resources) to audit to quality and progress of key projects.

4.5. Project Communications Management – Keeping stakeholders, influencers and key user groups apprised of progress is basic and yet is reduced or outright neglected when the project goes into crisis management. Leading organizations actively schedule project communications (and resource it) into the project plan but also create formal communications. (Steering committees; user groups, etc.)

4.6. Project Risk Management – Best practice organizations create a Risk Management Plan that identifies project risks, assesses their probability and impact, determines a strategy for mitigating them, and indicates how risks will be monitored.

D. Findings and Recommendations

Finding #6 The Office of the Chief Information Officer has limited impact on the outcome of projects and does not officially have accountability for project management. No standard project management methodology exists.

Although conceived with the right intention, the project management role that the CIO performs lacks the strategic charter and tactical muscle to consistently impact the successful management (time, budget, relevance) of projects. The project management function of the CIO office varies by project, spanning from managing projects, to monitoring, to overseeing and supporting projects. Providing these various project management functionalities undermines the actual role and impact of the CIO project management function.

The charter of the CIO project management group should strive for a maximum impact on initiating the right projects and executing projects successfully rather then appealing to the most common denominator of participating in projects. Managing 16 projects, providing management support for 78 projects and conducting oversight for 119 projects stretches the current 11 CIO project management resources thin and does not provide sufficient time for them to do other essential functions.

The interviews of the CIO associates indicated that they felt that the value they added on projects was questionable, and in many cases they had no clear task responsibility. (See CIO Employee Survey results in Appendix C)

Given the decentralized nature of project initiation and execution, the County lacks a common project management methodology to consistently execute projects on budget and on time. Collecting and disseminating this project management knowledge should become key tasks for a CIO project management function.

The lack of a formal County methodology makes it difficult to monitor and manage projects through the life cycle. Phases, milestones, tasks, subtasks, quality assurance, and security involvement is inconsistent from project to project. Discussions with CIO staff discovered that there was no consistency for methodology standards across projects, including phase, activities, tasks, templates, deliverables, checklists, issue logs, change logs, approvals, etc.

Recommendation #5. **Establish a formal Project Management Office (PMO) within the CIO organization to provide coordination and guidance and increase the level of training on project management activities. The PMO would be responsible for recommending a project methodology for the County and to develop and disseminate standardized project practices, tools and templates. (Management and accountability for projects would continue to be a departmental responsibility).**

PMO should consist of a core group of skilled Project Managers that will support other Project Managers throughout the County (see Finding # 9). The accountability for projects will clearly fall on the Departments with the exception of technology initiatives that are initiated and managed by the CIO.

The PMO should manage the project portfolio and the project managers should set and enforce project management standards, manage priority and resource conflicts, provide project management training, release standardized project practices, tools and templates, and review deliverables and reports on consolidated project results for all enterprise projects. Given that more than 80% of project costs are typically committed during the initiation and planning phase, the CIO office has a great opportunity to positively impact projects by focusing on the effort to plan these projects**.**

Finding #7 IT Projects are not consistently tracked and monitored across all County departments. Although there is no centralized database to track all IT projects within the County, the projects that are being tracked indicate substantial problems.

The "Information Technology Tracking System" (ITTS) was developed and implemented in April 2004 to track projects across all County departments. Further refinements and modifications were made to the application through October 2005.

However, there were only 47 projects in the ITTS as of August, 2006 representing input from only 16 departments. Although the total number of projects in the County was not determined it was clear that the system was not being populated by County departments, including the CIO. The CIO only has logged six projects into the data base; four projects were active, one project was closed and one project inactive. This was not in agreement with the "Summary of CIO Support of Department Projects" developed by the CIO, which listed about 119 projects in which the CIO had involvement.

A summary of the 47 projects in the data base is provided below:

- 22 projects were "In Progress", 15 of which were in the critical status of either behind schedule or over budget. Three projects were in the caution status and four were on schedule.
- 16 projects were "Not Activated."
-

- Eight projects "Completed" on time and on budget.
- One project "On Hold."

Recommendation #6. **Work with the IT Steering Committee to increase the utilization and effectiveness of the Information Technology Tracking System for all County IT projects.**

Improvement in project results cannot be accomplished unless their ongoing status is known. Tools should support the tracking project activity and the selection process of "green lighting" projects. ITTS provides rudimentary functionality that needs to be further assessed in order to advance from inventorying project progress to improving on project outcomes. This information provided by this system will be compiled by the CIO and presented to the IT Steering Committee.

Finding #8 There is insufficient emphasis placed on project management skills throughout the County, which contributes to the lack of timely and on-budget project completion.

The size and scope of the County's project list demand specialized skills. However, there is only one Certified Project manager in the CIO office. ISD attempted to develop a central project management group who would be available to the departments upon request. This never really got off the ground largely because of the inability to adequately staff the group with experienced project managers.

The project managers in the County are either provided by the department based upon the best person available at the time the project is initiated or supplied by a third party. Interviews and surveys with department IT staff and the CIO associates raised concerns about how project managers were selected and their skill level. This concern is compounded by the fact that project managers are rarely dedicated full-time to any project but are expected to perform other job duties/ projects.

The size and complexity of these projects demand skilled, experienced project managers who understand the discipline and have the authority to drive the project and make decisions relative to scope and schedule to ensure the success of the project.

Recommendation #7. **Ensure that qualified project managers are assigned to essential projects Countywide and review and, if necessary, adjust the skill sets required for project managers.**

Only experienced project managers should be used to manage large complex projects. In particular, the PMO and the IT Steering Committee should establish minimum requirements for project management and for implementing enterprise initiatives/projects. Assistance could be made available from the project management office previously recommended within the CIO.

The CIO should work with DHR to establish a project management training program that leverages the County's Training Academy, emphasizing the project practices, tools and templates developed by the PMO.

VI. CIO Relationship with Other County Departments

A. Introduction

To determine the relationship the CIO has with other County departments, blueCONSULTING conducted a Countywide survey of departmental IT personnel. The survey was sent to 43 people representing 35 departments. blueCONSULTING received 37 responses representing 34 departments.

Recipients of the survey were either IT personnel within a department or personnel having a direct association with the department's IT function. In most cases, the recipient was the individual filling the department's primary IT role. Department heads or other members of the user community were not targeted. Recipients in IT roles were felt to be the most impacted by the CIO as well as having the most day-to-day interaction.

The survey consisted of a series of statements regarding the Office of the CIO. Respondents were asked to indicate their degree of agreement or disagreement with each statement. The responses were assigned numeric values and represent the empirical aspect of the findings.

In addition, blueCONSULTING interviewed 27 personnel within ten County departments. Interviews varied according to whether the personnel worked within the IT function (CIO or ISD) or outside of these functions. IT staff were asked about professional and technical backgrounds, expertise, interactions with their clients and specific areas/issues they face executing their jobs. Non-IT personnel were asked about their interactions with the CIO; opinions of the IT strategy; issues which impede them getting their jobs done; and how to make the CIO more effective. Also, the survey asked the respondents to indicate any key areas for improvement by the CIO's Office as well as soliciting general comments. These responses are considered the subjective aspect of the findings.

Survey Results

The survey comprised a number of statements within four Statement Groups reflecting the mission of the Office of the CIO (see Appendix B for a copy of the survey and the subjective comments). The Statement Groups are:

- The Role of the CIO.
- Setting IT Strategy.
- Setting IT Standards.
- Planning and Support.

The respondents were asked to indicate their degree of agreement with the various statements as an indication of their satisfaction. The responses were valued where strong agreement was assigned a value of 5 and strong disagreement was assigned a value of 1. The response values were averaged, summarized by Statement Group, matrixed and analyzed in three dimensions:

- By Functional Group—groupings of County departments according to their functions. (See "Respondent Details" on the last page of Appendix B for a delineation of which departments were included in the various groupings, and the size of each group used for calculating averages.)
- By Department size.
- By whether or not the Department has a CIO.

Note that all averages appearing below and in the Appendix are calculated using the detailed survey responses. However, the detailed responses do not appear in this report as the respondents were assured of confidentiality.

Survey Analysis – Empirical Section

The survey responses were analyzed in three dimensions:

- By Functional Group as defined in the IBAP.
- By Department size.
- By whether or not the Department has a CIO.

The results of the analysis by Functional Group, Department Size and whether the Department has a CIO are provided in this chapter.

Notes:

- Averages for the IT Standards Statement Group along with the overall average responses are calculated with and without Question 10. Question 10 regards specific hardware and software standards. The responses reflecting agreement or disagreement with these types of standards is extremely subjective involving philosophies and belief-systems on what are the most suitable providers (e.g. the UNIX operating system is superior to Windows Server; Macintosh is superior to a PC). While indirectly relevant, these responses are not directly reflective of the CIO's performance versus charter.
- All averages are calculated using the detailed survey responses. The averages in Exhibit 5, Results Summary by Functional Group, were calculated as follows: Overall averages are the average of all responses received for all functional groups. Functional group averages are the average of all responses received for each specific functional group. Please note that the number of responses received for each functional group vary from one functional group to the other. This same approach is applied to Exhibit 6, Results Summary by Departmental IT Size, and Exhibit 7, Results by Department-level CIO.
- See "Respondent Details" on the last page of the Appendix for a delineation of which departments were included in the various groupings, and the size of each group used for calculating averages.

Results Summary by Functional Group

Exhibit 5: Results Summary by Functional Group

# of Respondents	37	19	2	9	6	1

Question	Overall Average	General Gov't	Health Services	Public Safety	Social Services	Internal Support
Role of the CIO						
1. My organization understands the role of the office of the CIO.	4.22	4.00	4.50	4.33	4.50	5.00
2. The office of the CIO is effective in providing professional guidance and advice on Countywide IT issues.	3.95	3.84	4.00	3.89	4.17	5.00
3. My organization believes the CIO's office provides the leadership and vision to move IT in a direction that best services our operations and our clients.	3.69	3.42	3.50	3.83	4.17	5.00
Role of the CIO Average	**3.95**	**3.75**	**4.00**	**4.02**	**4.28**	**5.00**
Setting IT Strategy						
4. My organization understands and supports the IT strategic goals of the County:	4.43	4.26	4.50	4.67	4.50	5.00
• Conduct County government electronically • Provide secure access to electronic applications • Utilize enterprise solutions to meet common needs • Improve the IT skills of the County workforce						
5. The office of the CIO is effective in developing a Countywide IT strategy.	3.76	3.58	3.00	4.00	4.00	5.00
6. The office of the CIO is effective in communicating the County's IT strategy.	3.70	3.68	3.50	3.89	3.50	4.00
7. My organization agrees with the IT Strategy as set forth in the 2005-2006 IBAP.	4.06	3.94	3.00	4.11	4.50	5.00
Setting IT Strategy Average	**3.99**	**3.87**	**3.50**	**4.17**	**4.13**	**4.75**

Exhibit 5: Results Summary by Functional Group

# of Respondents	37	19	2	9	6	1

Question	Overall Average	General Gov't	Health Services	Public Safety	Social Services	Internal Support
Setting IT Standards						
8. The office of the CIO is effective in establishing appropriate Countywide hardware, software and networking standards.	3.49	3.32	3.00	3.67	3.83	4.00
9. The office of the CIO is effective in communicating County hardware, software and networking standards.	3.57	3.56	2.50	3.50	3.83	5.00
10. My organization supports the following standards published by the CIO's office:						
10a. Processor – Intel P4/Centrino	4.11	4.00	4.00	4.22	4.17	5.00
10b. Desktop Operating System – Windows XP	4.24	4.11	4.50	4.22	4.50	5.00
10c. Server Operating System – Windows Products (NT, 2000, 2003)	4.14	4.00	4.00	4.22	4.33	5.00
10d. Security – Symantec or McAfee	4.38	4.42	4.50	3.89	4.83	5.00
10e. Productivity – Microsoft Office	4.19	4.11	4.50	3.89	4.67	5.00
10f. Internet Browser – Internet Explorer	4.16	3.89	4.50	4.11	4.83	5.00
10g. E-mail – Microsoft Exchange	3.97	3.95	4.00	4.11	3.67	5.00
11. The office of the CIO is effective in implementing and enforcing hardware, software and networking standards.	3.24	3.16	3.00	3.22	3.50	4.00
Setting IT Standards Average	**3.95**	**3.85**	**3.85**	**3.91**	**4.22**	**4.80**
Setting IT Standards w/o Question 10	**3.43**	**3.34**	**2.83**	**3.46**	**3.72**	**4.33**
Planning and Support						
12. The office of the CIO reviews and makes valuable recommendations on proposed IT projects.	3.84	3.58	4.00	4.00	4.17	5.00
13. The office of the CIO is effective in the planning of enterprise-level projects for the entire County.	3.51	3.26	3.50	3.56	4.00	5.00
14. The office of the CIO is effective in the implementation of enterprise-level projects for the entire County.	3.27	3.11	3.00	3.33	3.67	4.00
15. The office of the CIO provides my organization with valuable insights to ensure the alignment of our department plan with Countywide goals.	3.69	3.50	4.00	3.56	4.17	5.00

Exhibit 5: Results Summary by Functional Group

# of Respondents	37	19	2	9	6	1

Question	Overall Average	General Gov't	Health Services	Public Safety	Social Services	Internal Support
Planning and Support Average	**3.58**	**3.36**	**3.63**	**3.61**	**4.00**	**4.75**

Overall	**3.89**	**3.75**	**3.76**	**3.92**	**4.17**	**4.81**
Overall w/o Question 10	**3.74**	**3.59**	**3.50**	**3.83**	**4.04**	**4.71**

Results Summary by Departmental IT Size

For our purposes for this analysis, we considered department-level IT personnel count of 30 or greater large, while a count of less than 30 is small.

Exhibit 6: Results Summary by Departmental IT Size

# of Respondents	37	12	25

Question	Overall Average	Large	Small
Role of the CIO			
1. My organization understands the role of the office of the CIO.	4.22	4.17	4.24
2. The office of the CIO is effective in providing professional guidance and advice on Countywide IT issues.	3.95	4.00	3.92
3. My organization believes the CIO's office provides the leadership and vision to move IT in a direction that best services our operations and our clients.	3.69	3.75	3.66
Role of the CIO Average	**3.95**	**3.97**	**3.94**

Setting IT Strategy			
4. My organization understands and supports the IT strategic goals of the County:	4.43	4.58	4.36
• Conduct County government electronically • Provide secure access to electronic applications • Utilize enterprise solutions to meet common needs • Improve the IT skills of the County workforce			
5. The office of the CIO is effective in developing a Countywide IT strategy.	3.76	4.00	3.64
6. The office of the CIO is effective in communicating the County's IT strategy.	3.70	3.92	3.60
7. My organization agrees with the IT Strategy as set forth in the 2005-2006 IBAP.	4.06	4.25	3.96
Setting IT Strategy Average	**3.99**	**4.19**	**3.89**

Exhibit 6: Results Summary by Departmental IT Size

# of Respondents	37	12	25

Question	Overall Average	Large	Small
Setting IT Standards			
8. The office of the CIO is effective in establishing appropriate Countywide hardware, software and networking standards.	3.49	3.67	3.40
9. The office of the CIO is effective in communicating County hardware, software and networking standards.	3.57	3.75	3.48
10. My organization supports the following standards published by the CIO's office:			
10a. Processor – Intel P4/Centrino	4.11	4.33	4.00
10b. Desktop Operating System – Windows XP	4.24	4.50	4.12
10c. Server Operating System – Windows Products (NT, 2000, 2003)	4.14	4.25	4.08
10d. Security – Symantec or McAfee	4.38	4.33	4.40
10e. Productivity – Microsoft Office	4.19	4.58	4.00
10f. Internet Browser – Internet Explorer	4.16	4.58	3.96
10g. E-mail – Microsoft Exchange	3.97	4.50	3.72
11. The office of the CIO is effective in implementing and enforcing hardware, software and networking standards.	3.24	3.67	3.04
Setting IT Standards Average	**3.95**	**4.22**	**3.82**
Setting IT Standards w/o Question 10	**3.43**	**3.69**	**3.31**

Planning and Support			
12. The office of the CIO reviews and makes valuable recommendations on proposed IT projects.	3.84	4.17	3.68
13. The office of the CIO is effective in the planning of enterprise-level projects for the entire County.	3.51	3.50	3.52
14. The office of the CIO is effective in the implementation of enterprise-level projects for the entire County.	3.27	3.08	3.36
15. The office of the CIO provides my organization with valuable insights to ensure the alignment of our department plan with Countywide goals.	3.69	4.25	3.42
Planning and Support Average	**3.58**	**3.75**	**3.49**

Overall	**3.89**	**4.09**	**3.79**
Overall w/o Question 10	**3.74**	**3.91**	**3.66**

Results by Department-Level CIO

The following analyzes responses based on whether a department has a CIO or not.

Exhibit 7: Results by Department-Level CIO

# of Respondents	37	16	21

Question	Overall Average	CIO	
		Yes	No
Role of the CIO			
1. My organization understands the role of the office of the CIO.	4.22	4.31	4.14
2. The office of the CIO is effective in providing professional guidance and advice on Countywide IT issues.	3.95	4.00	3.90
3. My organization believes the CIO's office provides the leadership and vision to move IT in a direction that best services our operations and our clients.	3.69	3.63	3.74
Role of the CIO Average	**3.95**	**3.98**	**3.93**
Setting IT Strategy			
4. My organization understands and supports the IT strategic goals of the County:	4.43	4.56	4.33
• Conduct County government electronically • Provide secure access to electronic applications • Utilize enterprise solutions to meet common needs • Improve the IT skills of the County workforce			
5. The office of the CIO is effective in developing a Countywide IT strategy.	3.76	3.69	3.81
6. The office of the CIO is effective in communicating the County's IT strategy.	3.70	3.63	3.76
7. My organization agrees with the IT Strategy as set forth in the 2005-2006 IBAP.	4.06	4.13	4.00
Setting IT Strategy Average	**3.99**	**4.00**	**3.98**
Setting IT Standards			
8. The office of the CIO is effective in establishing appropriate Countywide hardware, software and networking standards.	3.49	3.56	3.43
9. The office of the CIO is effective in communicating County hardware, software and networking standards.	3.57	3.50	3.63
10. My organization supports the following standards published by the CIO's office:			
10a. Processor – Intel P4/Centrino	4.11	4.00	4.19
10b. Desktop Operating System – Windows XP	4.24	4.31	4.19
10c. Server Operating System – Windows Products (NT, 2000, 2003)	4.14	4.19	4.10
10d. Security – Symantec or McAfee	4.38	4.25	4.48

Exhibit 7: Results by Department-Level CIO

# of Respondents	37	16	21

Question	Overall Average	CIO	
		Yes	No
Setting IT Standards continued			
10e. Productivity – Microsoft Office	4.19	4.38	4.05
10f. Internet Browser – Internet Explorer	4.16	4.44	3.95
10g. E-mail – Microsoft Exchange	3.97	4.19	3.81
11. The office of the CIO is effective in implementing and enforcing hardware, software and networking standards.	3.24	3.25	3.24
Setting IT Standards Average	**3.95**	**4.01**	**3.91**
Setting IT Standards w/o Question 10	**3.43**	**3.44**	**3.43**
Planning and Support			
12. The office of the CIO reviews and makes valuable recommendations on proposed IT projects.	3.84	3.88	3.81
13. The office of the CIO is effective in the planning of enterprise-level projects for the entire County.	3.51	3.38	3.62
14. The office of the CIO is effective in the implementation of enterprise-level projects for the entire County.	3.27	3.00	3.48
15. The office of the CIO provides my organization with valuable insights to ensure the alignment of our department plan with Countywide goals.	3.69	3.88	3.55
Planning and Support Average	**3.58**	**3.53**	**3.61**
Overall	**3.89**	**3.91**	**3.87**
Overall w/o Question 10	**3.74**	**3.74**	**3.75**

B. General Conclusions

The survey comprised a number of statements within four Statement Groups reflecting the mission of the CIO (See Appendix B for survey and comments). The Statement Groups are: Role of the CIO; Setting IT Strategy; Setting IT Standards; and Planning and Support. The respondents were asked to indicate their degree of agreement with the various statements as an indication of their satisfaction. The responses were valued where strong agreement was assigned a value of 5 and strong disagreement was assigned a value of 1. Average or neutral responses received a 3. The response values were averaged and summarized by Statement Group. To ensure confidentiality of response, blueCONSULTING grouped the 37 respondents into five functional categories (as used in the IBAP): General Government (19 responses); Social Services (six responses); Public Safety (9 responses); and Health Services (two responses). The exception to the confidentiality goals was for the Internal Support functional group where only ISD responded. A list of the representative departments is provided in Appendix B.

Based on the analysis in the various dimensions shown above and included in the Appendix, showed that:

- Internal support (ISD is the only department in this category) departments had the highest level of satisfaction; Health Services departments had the least.
- Departments with a large IT presence (30 or more) have a higher level of satisfaction than departments with a small IT presence.
- Departments with a CIO have a higher level of satisfaction than departments without a CIO

The significance of these differences is limited. The variance between highest overall satisfaction and least overall satisfaction is less than 10% in all dimensions.

Subjective Results

The empirical survey data is only one aspect in attempting to understand the relationship of the CIO with other County departments. Comments were solicited in the survey and virtually all respondents made entries. These comments appear in Appendix B-3. The survey comments were reinforced by the results of various interviews with departmental personnel. The comments should be given equal weight (along with the empirical findings) to develop a more complete picture of the departmental view of the CIO.

VII. CIO Role in Establishing IT Standards

A. Introduction

The importance of standards is acknowledged as stated in the Integrated Business Automation Plan (IBAP) fiscal year 2005-2006, "One of the CIO's prime responsibilities is encouraging the departments to follow County IT standards. Compliance with these standards lowers acquisition costs, improves security and interoperability, and makes it easier for staff to transition between departments."

The benefits of IT standardization are evident in that:

- IT spending is substantially reduced due to focus and scale of only servicing standardized systems.
- Communication and decision making processes across IT departments are faster due to a written set of standards.
- Increasingly more IT projects are delivered on time and on budget due to a clear understanding of standardized IT technologies and therefore a deeper resource pool of skilled IT professionals mastering these technologies.

Despite the acknowledgement of these benefits, the CIO and County IT organizations are struggling to effectively implement IT standardization.

Appendix A of the IBAP 2005-2006, "I/T Strategic Directions" outlines strategic goals, strategy statements and objectives. At the heart of each of theses strategies is the need to develop and adopt industry standards, i.e. open systems computing, secured access to e-applications, confidential information, physical assets, etc.

To evaluate the CIO effectiveness in the area of standards blueCONSULTING looked at three key criteria in order to make a judgment: standards, processes and compliance.

- Completeness of IT Standards – Is a core set of IT Standards in existence that guides the various County of Los Angeles IT groups and departments?
- IT Standard Process – What is the process for drafting, approving, communicating, training and reviewing/sun setting of IT standards? Is that process deployed consistently across IT organizations? Is that process effective and efficient?
- Compliance of IT Standards – How are IT standards being adopted and enforced? What are the consequences of going outside of existing and approved IT standards?

The County currently has approximately 43 IT standards across the following categories (see Exhibit 8):

- Operating Systems.
- Networks.

- Security.
- Remote Access.
- Desktop Management.
- Office Productivity Software.
- Web Browser and Content.
- Database and Reporting.
- Application Standards.

Standards are developed by the CIO and vetted by departments, committees and submitted for Board approval. The process of crafting IT standards occurs predominantly through committees. The committee structure can range from ad hoc committees to ongoing committees supported by dedicated resources from the CIO.

Many people interviewed mentioned that there was a difference, in terms of their implementation, between a standard, established by the CIO, and a policy, approved and mandated by the Board of Supervisors. A standard is a good tool to help the County control purchasing, lower complexity, lower IT costs, build capabilities and knowledge in specific areas and communicate standards to project team members. A policy is the Board's way of saying that it is what they want and it ultimately governs the execution of a new standard. Procedures are the next level of detail and govern how the standard or policy is implemented. i.e., procurement rules.

In certain cases, IT standard committees determine if they feel a policy statement is necessary. This is then formalized and approved by the Board of Supervisors. This is somewhat subjective depending on the importance of the standard and associated exposure and risk of not conforming. There did not appear to be consistency with regard to when a policy is necessary.

Policies however do not always have to have standards, e.g., information technology security policy, Countywide computer security threat response, use of electronic mail (email) by County employees, etc.

There is no consistency with how and when the Board should approve standards. It appears that they feel that they must approve the standard only when there is a large expenditure of money involved or a specific product is identified.

The most recent policies were released in June, 2004 with a heavy emphasis on IT Security, covering the following areas:

- 6.100 Information technology Security Policy.
- 6.101 Use of County Information Technology Resources.
- 6.102 Countywide Antivirus security policy.
- 6.103 Countywide Computer security threat response.
- 6.104 Use of Electronic Mail (email) by County Employees.
- 6.105 Internet Usage Policy.

- 6.106 Physical Security.
- 6.107 Information Technology Risk Assessment.
- 6.108 Auditing and Compliance.

In the case of IT Security Standards, the CIO office has established a security team headed up by a Chief Information Security Officer (CISO) and two Assistant CIO members. The CISO position was established in November 2002, with the third member of the team added during 2006. Security Standards are developed by Security and Engineering Teams (SET) which are formed with representatives from various departments including ISD. These teams are ad hoc to address a specific sub-set of IT Security standards. These teams include:

- Anti-Virus Defense.
- Application Security Team.
- Countywide Computer Emergency Response Team.
- Host Strengthening and Isolation.
- Internet Content Filtering.
- Policies and Good Operating Practices.
- Remote Access and Wireless Access.

The Electronic Government Advisory Committee (EGAC) is another formal and standing committee structure that has been implemented to better align information technology investment with business goals. In an effort to further enhance County's Web enabled services by developing an integrated approach to gain broader input and participation in enhancing the use of County service on the internet. The Electronic Government Advisory Committee (EGAC) was formed by the CIO on September 12, 2005. The CIO chairs the committee with member participants from the County departments. Over 25 members are on the Committee. EGAC sub committees include:

- Taxonomy and Metadata.
- Website Look & Feel and Branding.
- Centralized eNotify System.
- E-Commerce Readiness Group.
- Visibility for on line services.
- Service Oriented Architecture (Web Services).

The responsibilities include but not limited to developing standards that facilitate the application of Web technologies to improve the quality, efficiency and convenience of County services. As of August, 2006 no standards have been implemented.

Once the standard is developed it then goes through a series of 14 approval levels including department, agencies, and committees to become an IT standard. Approval processes can differ by IT Standard according to the area and content of the Standard. For example, standards

specific to employees must be presented to the Department of Human resources as well as their labor unions, requiring additional approvals and sign offs.

Following the final approval by the Board, the CIO sends out the new IT policy to the department heads. In addition, the new IT policy is posted on the LA Intranet under Board of Supervisors Policies.

However, in accordance to the table below, only a small percentage of standards have been approved by the Board leaving the approval process to entities outside the Board. The perception of others within the County is that the standards not formally approved by the Board are "suggestions" but not specifically required.

Only a small number of IT standards have been adopted Countywide (see Exhibit 8—Status of IT Standards). In general, a well conceived policy helps govern the compliance of County standards. The CIO office resources have very little involved past the approval process.

Contributing to this is the fact that the implementation of IT Standards is primarily the responsibility of the individual departments to develop their own procedures, templates, and plans for implementation. This disconnects the development from the implementation process, yielding in low adoption rates. There was also no formal compliance process in place to ensure high level adoption rates.

Formal standard reviews, compliance reviews and/or sunset processes are performed informally on an annual basis in conjunction with the IBAP process.

The information provided in Exhibit 8 was modified slightly from the way it was presented in the IBAP to provide the current inventory of IT Standards, including approval and adoption levels. Please note that the adoption standards are estimates provided by the various departments and summarized by the CIO. In many cases the adoption status was unknown and therefore the field was left blank.

Exhibit 8: Status of IT Standards

Category	Description	Board Approved	Department Adoption/Status
Operating Systems			
Client operating system	Windows XP		77%
Enterprise Server operating system	Windows Server 2003		
Mid-Range/Department	HP- UNIX, Linux		
Networks			
WAN	Enterprise Network, LAnet	Approved May 2000	All departments except Sheriff
LAN	Windows 2003		
WAN/LAN Infrastructure	Cisco and TCP/IP	Approved May 2000	

Exhibit 8: Status of IT Standards

Category	Description	Board Approved	Department Adoption/Status
Wireless LAN	Cisco 802.11g	Approved May 2000	
Configuration Standards	Wireless LAN Guidelines		Adopted by ISSC
	IP Addressing and Usage Baseline Security Guideline		Under consideration by ISSC
	Network Device Strengthening Baseline Security Guideline		Under consideration by ISSC

Security			
Antivirus	Symantec Network Associates (McAfee)		99%
Patch Management	PatchLink Altiris		
Antispam	BrightMail		
Firewall	Cisco PIX Firewalls		
Network Intrusion Detection and Prevention	Cisco NIDS		
Host Intrusion Protection	Cisco CSA and McAfee Entercept		
Internet Filtering	BlueCoat		100%
Hard Disk Encryption	Releasing RFP August 2006 to identify software product with scheduled executable contract by November 2006		
Configuration Standards	MS Windows 2000 Baseline Security Standards		Adopted by ISSC
	MS Windows XP, Service Pack 2 Baseline Security Standards		Adopted by ISSC
	Patch Management Standards for Servers and Workstations		Adopted by ISSC
	Computer Security Incident Notification Process		Adopted by ISSC
	Network Data Classification Standards for Connecting to External Agencies		Adopted by ISSC
	Blackberry Security Standard		Under development by County Security Engineering Teams
	Baseline Server Security Standards		Under development by County Security Engineering Teams
	AIX Baseline Security Standards		Under development by County Security Engineering Teams
	Wireless Access Security Standards		Under development by County Security Engineering Teams
	Vulnerability Assessment Standards		Under development by County Security Engineering Teams
	Site-to-Site VPN Security Standards		Under development by County Security Engineering Teams

Exhibit 8: Status of IT Standards

Category	Description	Board Approved	Department Adoption/Status
	Remote User Device Security Standards		Under development by County Security Engineering Teams
	Remote Administrator Security Standards		Under development by County Security Engineering Teams
	PDA Security Standards		Under development by County Security Engineering Teams
	Password Security Standards		Under development by County Security Engineering Teams
	OWA Security Standards		Under development by County Security Engineering Teams
	Modem Access Security Standards		Under development by County Security Engineering Teams
	IT Network Physical Security Standards		Under development by County Security Engineering Teams
	IM Security Standards		Under development by County Security Engineering Teams
	Firewall Security Standards		Under development by County Security Engineering Teams
	Extranet Vendor Security Standards		Under development by County Security Engineering Teams
Remote Access			
Remote Access	Enterprise Network VPN Outlook Web Access		
Two factor authentication	RSA SecurID		100%
Desktop Management			
Directory Services	Active Directory		
Desktop Configuration Management	Altiris		
Desktop Firewall	Zone Alarm, MS XP SP2.		
Office Productivity Software			
Desktop Office Suite	MS Office 2003		82%
Word Processing	MS Word 2003		
Spreadsheet	MS Excel 2003		
E-mail	MS Outlook/Exchange 2003		50%
Presentation software	MS PowerPoint 2003		
Adobe pdf	Adobe Acrobat Professional		
Web Browser and Content			
Browser	MS IE 6.0 above w/128 bit encryption		97%
Web content management	Stellant		
Portal Software	WebSphere		

Exhibit 8: Status of IT Standards

Category	Description	Board Approved	Department Adoption/Status
Databases and Reporting			
Database Architecture	SQL compliant		
Database software	Oracle and SQL Server		
Ad hoc Report Writer - Business Intelligence	Cognos Business Intelligence Product Suite	Approved May 2005	
Applications			
GIS	ESRI Arc Tools		
Enterprise Content Management	Releasing RFP in Sept 2006 to identify software products with scheduled executable contract by December 2006		
Electronic Commerce	Link-2-Gov (ASP and process vendor)	Approved April 2006	Adoption is based department need

Source: 2005-2006 IBAP

B. Best Practices

This section describes three areas of best practices: security standards, standards-development process, and Countywide integration of IT standards.

- Best Practice organizations manage, monitor and control IT Security standards centrally within the IT organization. They assess the organization's security risk factors and vulnerabilities using the following IT Security Policy Best Practice Checklist:

Exhibit 9: Best Practice Checklist

IT Security Policy Area	IT Security Components
Web Browsing	Proxy server, router, firewalls User access Content control Improper sites visits Web logs Standardized Windows IE settings Download security software/spy ware
Username and passwords	Password requirements Single-Sign-On (SSO) Username and Password documentation In-house password cracking tests Renaming of default Admin accounts
Instant Messaging	Complete blocking of IM Capture IM logs Implement Content and download control mechanisms IM documentation and training
E-Mail	Storage levels for each email account Control external access to internal groups Email content control Anti-spam software

Exhibit 9: Best Practice Checklist

IT Security Policy Area	IT Security Components
	Email anti-virus scanning Email archiving program Policy on using company email for personal use Train users on “phishing” scams to help prevent identity theft
File Access Permissions	Document owners of critical files Determine access rights Watch out for shares with the default permission “Everyone” Consider logging success and failure access and modifications to files (Digital Right Management)
Backups	Document what data needs to be backed up, how often and for how long Document testing policies Consider Encrypting back up tapes Ensure offsite backups
Crisis Management & Disaster Recovery	Develop crisis management plan Develop disaster recovery plan and test procedures
Physical (Data Centers, Server Rooms, etc.)	Document physical security controls Physical and electronic locks UPS and back up generators Fire protection Video surveillance Resilience to natural disasters
PCs and Laptops	Document the controls on PCs and Laptops Users should always log onto the domain and not have a local account Use file encryption in case laptop gets stolen Run antivirus and anti-spam software Consider personal firewalls on laptops Implement Windows Group Policy security controls Develop procedure to update PCs and laptops Develop policy on USB removable devices
Remote Access	Control access to dial-up and VPN remote access Document policy on remote access Log success and failure of logins for remote access Periodically perform 3rd party penetration test on any dial-up and remote access methods Implement method to ensure that clients connecting through remote access have the proper antivirus and patches installed to prevent them from infecting the systems. Document whether remote VPN users can have a split tunnel Consider using access tokens as a secondary authentication method for remote access
Servers, Routers and Switches	Run antivirus and anti-spam software on servers Ensure latest patches installed Log events to a central logging server Run performance monitoring software Document who has admin/root level access and how often the password is changed Document access methods and privileges to vendors with access to servers and networks Consider adopting standards outlined by the NSA

Exhibit 9: Best Practice Checklist

IT Security Policy Area	IT Security Components
Internet/external Networks	Have 3rd party periodically perform penetration test on your internet connections Protect internal network and the DMZ form the external network with a state of the art firewall. Track/log denials. Document the firewall rules with explanations and make firewall configurations consistent across different segments Use an Intrusion Prevention System to stop malicious attacks Minimize your number of internet connections Consider implementing a Security Information Management (SIM) in your network as a central repository for security information
Wireless	Periodically have a 3rd party perform a penetration test on your wireless network Use strongest form of WEP encryption possible Consider a wireless security product that will help to prevent wireless signals from leaving your building or office and will control rogue access points on your network Consider using 802.1X authentication as a secondary authentication method for any wireless users besides WEP key Document and educate users on wireless policies
Logging	Implement a central logging server Document how information is logged, who can view the logs, and how long the logs are kept
PDA and Cell Phones	Document proper and improper use of cellular phones and PDA's Consider using a product that will "remote kill" a lost PDA or cell phone and render its data useless Document what types of cellular phones will be supported and who will support them
Documentation and Change Management	Document who will control the changes made to the security policy and who will keep the documentation up to date Documents the process what changes must go through before they can be implemented

- Best practice organizations have a formal IT Standard development process that is managed by dedicated Standard Managers who facilitate the process from proposal stage to approval/rejection stage. A review of the process will reveal the following high-level steps:
  - Begin Standard Proposal or Retirement (originating body).
  - Standard Manager (or responsible department – standards group) receives proposed standard.
  - Standard Manager/Department requests comments from various IT stakeholders (users, owners, etc.).
  - Standard Manager/Department receives and consolidates comments.
  - Standard Manager/Department forwards comments to originating body.
  - Standard Manager/Department receives comment resolution.
  - Stakeholders agree/disagree, give feedback.
  - Standard Manager/Department quantifies stakeholder feedback for consensus.

- Proposal becomes interim Standard (if consensus is reached).
- IT Council Approval (if consensus is reached).
- If no consensus is reached, back to originating body otherwise adopt or retire standard.

- Best practice Organizations integrate IT standard process into a Countywide IT Governance model. "Ensuring Compliance" is a critical sub-process within an IT Governance model. As such, major IT purchase decisions (hardware, applications, projects, infrastructure, etc.) have to follow and comply with current IT Standards.

C. Findings and Recommendations

Finding #9 IT Standards adoption rates are low across all standard categories (except specific desk top applications).

The CIO is responsible for identifying IT standards in a number of areas but has no authority to implement them throughout the County. Adoption rates are determined based on questions asked at the time of the IBAP process once a year. The adoption rate of many of the standards outlined in Exhibit 8 above appear to be low and raises concerns for rogue standards across the County of Los Angeles IT organization.

Exhibit 8 – Status of IT Standards illustrated that many of the preferred standards identified by the CIO have not been adopted and, more importantly, there is no easy way of determining whether or not the standard has been adopted. These are merely guidelines that each department may or may not elect to follow. There was not a formal audit function to determine accurate adoption rates by department. Therefore it is very difficult to accurately assess the adoption rate of key standards throughout the County departments.

Standards are implemented by the individual departments. Discussions with the department IT staff indicated that many times there is just no budget to comply with the standard or budget constraints of the individual departments hamper the ability to achieve broad acceptance to effectively implement.

Recommendation #8. **As part of the proposed IT Governance model and charter, the Board should delegate authority to the IT Steering Committee for development, approval and management of IT standards.**

Fusing the development with the implementation process is critical to achieve high adoption rate. Additional training and communication is needed to support this goal. Approving new technologies that don't meet and/or support current IT Standards need to be red flagged and require special approval by an IT Governance Committee.

IT spending is substantially reduced due to focus and scale of only servicing standardized systems. Communication and decision making processes across the County will be enhanced if and when the departments understand and implement IT standards.

Increasingly security will be heightened, and exposure to network outages, security breaches and exposure to data and asset loss will be minimized with Countywide implementation of standards.

Finding #10 There is a lack of dedicated resources to manage the entire IT Standard Process.

The CIO lacks dedicated resources to manage standards outside the IT Security category. Security staff is diverted to security operational problems, taking away from the strategic emphasis of security standards development.

Standards are primarily developed by committees which are staffed by representatives from departments and ISD, i.e. Cisco, Security Committees and E government. The CIO oversees these groups and it is up to the group to research, develop and propose standards. The CIO associate is expected to drive these groups but also perform other responsibilities.

Recommendation #9. **Work with the CAO and include a request in the CIO Fiscal Year 2007-2008 Budget request for the requisite resources (staff, equipment, and space) to provide dedicated resources to address standards development and management.**

It is important that the dedicated staff work only on the identification, development and approval of key standards in the County and not diverted onto other conflicting operational issues.

Finding #11 There is not a clear sense of which standards should have priority and would provide the greatest benefit to the County.

According to Exhibit 8 above, IT security standards (protect IT data and IT assets), operating platforms, application standards, programming & open source standards, data interchanges and management/control standards should be high on the list.

Although there is a list of technology standards in the IBAP, we were unable to obtain a clear understanding of the standards currently under development and the relative priority of those standards to the County.

Recommendation #10. **Define a core set of standards that incorporate existing and planned standards and overlay it against ten critical areas (as a beginning) of standard development (see Exhibit 10 below).**

Take an inventory of existing standards, determine the relevancy and currency of existing standards (keep, update, discard), list standards under development and determine "gaps" that need to be addressed with new standards.

Conduct a Vulnerability Assessment to determine the areas that afford the greatest risk to the County and have a third party periodically perform penetration test on your internet connections.

Exhibit 10: Ten Critical Areas of Standards Development

User	▪ Includes the operating system commands, graphical display formats, and other devices that allow a user to interact with and use a computer or program.
Application	▪ Defines the methods by which people access and interact with applications and determines the functionality to be provided by the workstation.
Programming	▪ Provides the languages, tools, and methodologies for developing and maintaining software.

Exhibit 10: Ten Critical Areas of Standards Development

Data Management	▪ Includes procedures, practices, methods, software, data dictionaries, directories, database management systems, and distributed data schemes employed to manage data. Data management activities can be independent of the processes that create or use the data. Data management activities can provide for data to be maintained indefinitely and shared among many processes or systems.
Data Interchange	▪ Supports data exchange between applications on the same or different platforms. Data interchange activities can provide specialized support for information exchange involving data formats, such as text, spreadsheet, desktop publishing, graphics, compression, geospatial, geographical, and scientific.
Network	▪ Provides connectivity and services for data communications, electronic mail, directory, transparent file access and transfer, and remote access and procedures calls. Network services extend throughout the LA County Network complex and provide communications links with external entities.
Operating System	▪ Provides the software environment initially loaded into the computer that manages all the other programs and provides necessary interfaces to other devices while maximizing use of machine resources.
Hardware Platform	▪ Provides the physical layer and infrastructure to support other services.
Security	▪ Is a cross-cutting service area emphasizing that cyber security permeates all levels of the LA County information technology architecture. Security services ensure the secure distribution and integrity of information and protect the computing infrastructure from unauthorized access.
Management	▪ Service area that provides technical mechanisms to monitor and control the operation of individual applications, databases, systems, platforms, networks, and user interactions with these components.

Finding #12 The process used to develop and release IT Standards takes too long.

The committee process with representatives from various departments is a good way to get department input on standards but trying to facilitate the evaluation and development using scarce resources is time consuming. These resources are normally working on their primary job function and spend limited time on standard committee assignments.

According to the Office of the CIO the Board of Supervisors recently took exception to the CIO disseminating even technical standards without full cycle of review and submission to the Board for formal approval. There is confusion as to what IT standards should be reviewed by the Board of Supervisors in an effort to clarify their role and shorten the approval cycle.

The EGAC committee has 25 members and was established over a year ago in September 2005 with no policies recommended to date. The Security Committees have not released a policy since June of 2004. Exhibit 8 listed 16 standards that are still under development.

An example of this is how the CIO has approached the setting of laptop security standards using a "path of least resistance". Laptop security has been an issue for organizations for several years with highly visible breaches identified in the media. However, to develop laptop security standards, the Office took what they called a "thoughtful and collaborative" approach. In fact, the standards had not been released as of early August when the County had a security breach of laptops in the DHS. At least the perception to the public is that the CIO was reactive to the breach rather than proactive, indicating a lack of leadership on this issue.

Recommendation #11. **Work with the proposed IT Steering Committee to develop a more streamlined standards development and approval process, subject to the Board's willingness to delegate standard approval to the committee.**

Apply the high-level process outlined in the Best Practice section to streamline and compress IT Standard development and implementation cycles. Also, review IT Standard workflow applications to automate review cycles, version control and retrieval.

Special attention should be given to the necessity of all the number and value of the current approval levels required prior to standard adoption. It is strongly recommended that the Board of Supervisors delegate authority to the IT steering committee for development, approval and management of IT standards.

Finding #13 Communication of standards is not structured or formalized to the Departments and Board.

Through the interview process the CIO was criticized by the departments for not having communicated adequately the technology standards for the County. Although there are scheduled meetings with the departments and board deputies, the comments indicated that they were not structured and did not clearly communicate new standards and the value to their organization or the County

No formal education for the Board or departments is held to communicate and educate the importance of IT standards and associated risk to count data and assets. The interviews highlighted a reluctance to meet with the board regarding the CIO's strategy and direction for IT standards.

New standards are communicated by way of communication memos from the CIO office and also reflected in the IBAP document once a year. Currently Policies are posted on the Board's Website.

Recommendation #12. **Departmental CIOs/IT Managers must be charged with the responsibility to promptly implement and manage IT standards within their respective Departments, under the oversight of the IT Steering Committee.**

In order to better facilitate communication with the various Departments, each Department needs to assign to track implementation of standards as well as report back to the CIO. Since many departments lack the resources for such specialized functions it is recommended that the departments CIO/IT manager assume that responsibility.

Furthermore, the LA County Intranet side should clearly state all standards in an easy to group format, including responsible people to contact. This representation will have the responsibility to formally update the departments on New IT standards and the sun setting of old standards.

The CIO should educate and make the Board of Supervisors aware of current and future Security Risks in order to establish a LA Countywide Security Charter (including budgets). Security and Compliance has become a board-level issue for many leading organizations.

2006 Chief Information Office Operations & Countywide Technology Services Study

Appendices to the Final Draft Report

November 2006

APPENDIX A
List of People Interviewed and Documents Requested

APPENDIX A-1 INTERVIEW LIST

NAME	DEPARTMENT	DATE
1. Jon Fullinwider	CIO	6/6/06
2. Greg Melendez	CIO	6/8/06
3. Richard Sanchez	ISD	6/9/06
4. Dave Lambertson, Tom Tindell	ISD	6/9/06
5. Jonathan Williams	CIO	6/13/06
6. Lori Glasgow, Louisa Oleagua	Board Deputy	6/13/06
7. Mike Gin	Board Deputy	6/14/06
8. Tyler McCauley	Auditor Controller	6/14/06
9. John Fullinwider	CIO	6/14/06
10. John Fullinwider	CIO	6/22/06
11. Greg Melendez	CIO	7/17/06
12. Ali Farahani	CIO	7/17/06
13 Dennis Shelly	CIO	7/18/06
14 Al Brusewitz	CIO	7/18/06
15. Sharon Harper	CAO	7/24/06
16. David Mayer	CIO	7/24/06
17. Dean Stroud	Sheriff	7/24/06
18. Donald Wolf	DPW	7/24/06
19. Kerry Silverstrom, Brad Fleischer	Beaches & Harbor	7/25/06
20. Shelley, Nazarbegian, Clark	CIO	7/25/06
21. Dave Lambertson	ISD	7/26/06
22. Dr. Raoul Freeman	Info. Sys. Commission	7/26/06
23. Gary Sysock	Info. Resource Management, BOS	8/1/06
24. Robert Sawyer, Vic Mesrobian	County Fire Department	8/1/06
25. Robert Pittman, Al Brusewitz, James R. Hall.	CIO	8/1/06
26. Diane Lee	CIO DPW	8/1/06
27. Richard Sanchez	ISD	8/16/06

APPENDIX A-2 REFERENCE DOCUMENT LIST

Doc #	Description	Date Req	Date Rec	Comment/Status
1	Integrated Business Automation Plan 2005 – 2006		As of 7/6/05	
2	LA County Information Technology Strategy, Direction and Key Initiatives		As of 7/6/05	
3	A Proposal for LA County Master IT Consulting Services		As of 7/6/05	
4	Chief Information Office – Organization Chart		As of 7/6/05	
5	CIO Duties 2.119.030		As of 7/6/05	
6	Department Head Listing (Excluding CIO)		As of 7/6/05	
7	IT Manager Listing		As of 7/6/05	
8	Government Auditing Standards – 2003 Revision		As of 7/6/05	
9	Department Numbers Organization Numbers		As of 7/6/05	
10	Information Technology Final Annual Report 2004 – 2005		As of 7/6/05	
11	Quality & Productivity Commission Update on CIO Activities		As of 7/6/05	
12	Enterprise Information Technology Advisory Groups		As of 7/6/05	
13	Department Head's Goals and Accomplishments(MAPP Goals) FY 2004,2005,2006		As of 7/6/05	
14	Board Letter Approving the Creation of the Office of the CIO		As of 7/6/05	
15	Board Policy on Security (draft): • 6.100 – Information Technology Security Policy • 6.101 – Use of County Information Technology Resources • 6.103 – Countywide Security Threat Responses		As of 7/6/05	
16	Network Device Security Strengthening – Baseline		As of 7/6/05	

Doc #	Description	Date Req	Date Rec	Comment/Status
	Security Guidelines			
17	CIO Analysis Summaries		As of 7/6/05	
18	CIO Analysis (Full document) Jail Hospital Info. Sys. (IHIS)-Large Project.		As of 7/6/05	
19	CIO Analysis(Full document)-Contract for Interface & Data Conv./Programming Services-Small Project.		As of 7/6/05	
20	Turnkey Healthcare Information Sys. (HIS Project) in process of CIO Analysis		As of 7/6/05	
21	Summary of CIO Support of Dept Projs.		As of 7/6/05	
22	ITSS Briefing		As of 7/6/05	
23	CIO Proposed Budget FY 2004-05		As of 7/6/05	
24	Policy Memos from CIO to Dept. Heads		As of 7/6/05	
25	Imaging Project 11/29/04		As of 7/6/05	
26	Presentation-Strategies, directions, and key initiatives		As of 7/6/05	
27	Enterprise Content Management Strategy –April 28, 2004		As of 7/6/05	
28	Cyber terrorism-Protecting the City's Tech-Based Assets-1/24/02		As of 7/6/05	
29	IT Optimization Assessment-11/30/04		As of 7/6/05	
30	Local Recovery Center		As of 7/6/05	
31	ISD Organization Chart		As of 7/6/06	
32	ISD Prof. Measures-FY 05-06		As of 7/6/06	
33	ISD Strategic Plan FY 04-05		As of 7/6/06	
34	Data Center Analysis-Compass Final Report 6/25/06		As of 7/6/06	
35	ISD Strategic Plan FY 05-06		As of 7/6/06	

Doc #	Description	Date Req	Date Rec	Comment/Status
36	Open			
37	CIO Staff Directory & Dept Assignment		As of 7/10/06	
38	Executive Office IT Optimization Study-2004		As of 7/10/06	
39	Customer Evaluation of ISD Services 2003		As of 7/10/06	
40	Customer Evaluation of ISD Services 2004		As of 7/10/06	
41	Customer Evaluation of ISD Services 2005		As of 7/10/06	
42	ISD Restructuring Study-1995		As of 7/10/06	
43	HER Design-eCAPS Project		As of 7/10/06	
44	Establishment of ISD Dept-1989		As of 7/10/06	
45	Key Initiatives & Business Ops-PP presentation		As of 7/10/06	
46	LACAS-A Study in Leadership-PP Presentation with note indicating lead to the eCAPS ERP.		As of 7/10/06	
47	Enterprise Res. Planning Feasibility Study prepared by Deloitte.		As of 7/10/06	
48	Countywide Geographic I/S (GIS) Assessment Study		As of 7/10/06	
49	Dept. BAP with organization charts and staffing for all county IT orgs.		7/27/06	
50	Minutes from ITIL Educational Workshop		7/27/06	
51	Associate to the CIO status rpts		7/27/06	
52	Project Status Report-eCaps		7/27/06	
53	Strategic Plan Tracking-MAPP Year 05-06 Programming Services		7/31/06	
54	Strategic Plan Tracking-MAPP Year 05-06 Communications Support		7/31/06	
55	Restructuring of Internal Services Dept. Report 1995		7/31/06	
56	Project Status RPT-Network		7/31/06	

Doc #	Description	Date Req	Date Rec	Comment/Status
	System Top 10			
57	Project Status RPT-ISD Top 10 for various sections		7/31/06	
58	Policy Approval Checklist		8/1/06	
59	ISD-Rate Book		8/16/06	
60	Sample ISD-SLA with Dept. of Children and Family Services		8/16/06	
61	MAPP-R.Sanchez-2006		8/16/06	
62	IBAP for 2003-04		8/17/06	
63	IBAP for 2004-05		8/17/06	
64	Fire Dept.-IT Strategic Plan-2006		8/20/06	

APPENDIX B
Survey of County IT Personnel, Respondent Information and Subjective Comments

APPENDIX B-1 QUESTIONNAIRE

LA COUNTY CIO OPERATIONS AND COUNTYWIDE TECHNOLOGY SERVICES STUDY

We are seeking your response to assist in evaluating and improving the effectiveness of the Office of the County CIO. Please take a few minutes and complete the following.

Department Name:	
Your Name (optional):	
Your Title/Function:	
Does your department have its own central IT function? (Y/N):	

Please respond to the statements in the following four categories that constitute various aspects of the CIO's office. Make an "X" under the response that most closely matches your feelings.

The Role of the CIO				
1. My organization understands the role of the office of the CIO.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2. The office of the CIO is effective in providing professional guidance and advice on Countywide IT issues.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3. My organization believes the CIO's office provides the leadership and vision to move IT in a direction that best services our operations and our clients.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Setting IT Strategy				
4. My organization understands and supports the IT strategic goals of the County: • Conduct County government electronically • Provide secure access to electronic applications • Utilize enterprise solutions to meet common needs • Improve the IT skills of the County workforce				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5. The office of the CIO is effective in developing a Countywide IT strategy.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6. The office of the CIO is effective in communicating the County's IT strategy.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

7. My organization agrees with the IT Strategy as set forth in the 2005-2006 IBAP.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Setting IT Standards				
8. The office of the CIO is effective in establishing appropriate Countywide hardware, software and networking standards.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9. The office of the CIO is effective in communicating County hardware, software and networking standards.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10. My organization supports the following standards published by the CIO's office: • Processor – Intel P4/Centrino				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
• Desktop Operating System – Windows XP				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
• Server Operating System – Windows Products (NT, 2000, 2003)				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
• Security – Symantec or McAfee				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
• Productivity – Microsoft Office				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
• Internet Browser – Internet Explorer				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
• E-mail – Microsoft Exchange				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11. The office of the CIO is effective in implementing and enforcing hardware, software and networking standards.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Planning and Support				
12. The office of the CIO reviews and makes valuable recommendations on proposed IT projects.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

13. The office of the CIO is effective in the planning of enterprise-level projects for the entire County.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
14. The office of the CIO is effective in the implementation of enterprise-level projects for the entire County.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15. The office of the CIO provides my organization with valuable insights to ensure the alignment of our department plan with Countywide goals.				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

If there was one area the Office of CIO could be more effective, what would that area be?

Comments:

If you have any questions, please contact Hal Corner at: (323) 882-8566

PLEASE COMPLETE AND RETURN VIA EMAIL BY CLOSE-OF-BUSINESS ON FRIDAY, 7/21/06

APPENDIX B-2 RESPONDENT INFORMATION

The following details the characteristics of the survey respondents. Included are the Departments surveyed, their Functional Group, if they have a CIO, the size of the department-level IT, and the number of respondents. A department-level IT size of 30 or greater is considered large (L). A size of less than 30 is small (S).

Department	Functional Group	CIO (Y/N)	IT Size (L/S)	Respondent Count
Affirmative Action Compliance	General Government	N	S	1
Agricultural Commissioner/Weights & Measures	General Government	N	S	1
Animal Care and Control	General Government	N	S	1
Assessor's Office	General Government	Y	S	1
Auditor-Controller	General Government	Y	S	1
Beaches and Harbors	General Government	N	S	1
Chief Administrative Office	General Government	N	S	1
Child and Family Services	Social Services	N	L	2
Child Support Services	Social Services	N	S	1
Community and Senior Services	Social Services	Y	S	1
Consumer Affairs	General Government	N	S	0
Coroner	Public Safety	N	S	1
Corrections	Public Safety	N	S	1
County Counsel	General Government	N	S	1
DHS	Health Services	Y	L	1
Fire Department	Public Safety	Y	L	1
Human Relations Commission	General Government	N	S	1
Human Resources	General Government	N	S	1
Internal Services Department	Internal Support	Y	L	1
Mental Health	Health Services	Y	S	1
Military and Veterans Affairs	Social Services	N	S	0
Museum of Art	General Government	Y	S	1
Ombudsman	Public Safety	N	S	1
Parks & Recreation	General Government	N	S	1
Probation	Public Safety	N	S	1
Public Affairs	General Government	N	S	0
Public Defender	Public Safety	N	S	1
Public Defender – Alternate	Public Safety	Y	S	1
Public Library	General Government	N	S	1
Public Social Services	Social Services	Y	L	2
Public Works	General Government	Y	L	3
Regional Planning	General Government	N	S	1
Registrar-Recorder/County Clerk	General Government	N	S	1
Sheriff Department	Public Safety	Y	L	2
Treasurer & Tax Collector	General Government	N	S	1
			Total	37

Note: the Consumer Affairs survey recipient declined to respond as they had neither visibility of nor interaction with the Office of the CIO.

Functional Group Summary

Functional Group	Number of Respondents
General Government	19
Health Services	2
Public Safety	9
Social Services	6
Internal Support	1
Total	37

APPENDIX B-3 SUBJECTIVE RESULTS FROM INTERNAL QUESTIONNAIRE

In the questionnaire, respondents where asked, "If there was one area the Office of CIO could be more effective, what would that area be?" and to write in comments. Approximately, 80% of all respondents either filled in an answer to the question and/or commented. The following are the responses received. For ease of reading they were sorted into 5 categories. Most quotes are one per respondent and not all respondents completed this section.

Communications/coordination

- The departmental CIOs rarely talk to each other in any coordinated way and they even more rarely talk to the CIO. There are routine meetings in which the CIO presents to departmental CIOs, but for whatever reason, they rarely involve department CIOs sharing their greatest concerns with the County CIO. In some cases, there are issues that cut across multiple departments in which the CIO is in a position to broker cost effective solutions.

- Increased contact and communication between the CIO analyst assigned to a Department and the Department they are assigned to.

- Communications

- Better communication with departments, regarding enterprise aggrements (sic) with vendors, so that departments don't end up conducting their own research and negotiation and therefore duplicationg (sic) efforts.

- Publicize hardware and software standards
  2. Coordinate the purchase of IT related training for all Departments for better rates and accommodations
  3. Provide technical and administrative support to Departments in regards to their request for new IT positions from DHR.

- Encourage monthly meetings to be more interactive and/or instructive; send general updates through email in order to shorten meetings.

- More roundtable discussions with IT Managers

- It would be nice to see some high level interaction between the CIO's office and departments, so the Director or designee can discuss interests and initiatives of interest to him/her. Similarly, the CIO or designee could discuss with department senior management staff what other departments are doing and what they recommend we do. And, most importantly, to make things happen.

Leadership

- Refer to question #3. Work hands on with departments to ensure they are moving forward on IT initiatives to improve efficiency, customer service and to stay current with industry technology standards. There are extreme disparities between departments relative to technology capability and progress. For the most part, departments are left to determine what they should be doing to move ahead technologically, which means they're limited by the staff they have on-board and their experience and knowledge/talent in the IT field. The CIO has hired many high-level and experienced staff that have extensive knowledge that can help departments not only stay current, but to move forward to implement technology projects. However, they're job is apparently not to

support departments, but perhaps to work on Countywide initiatives, standards, etc. We do have an assigned analyst, but they are primarily for consultation, and presently don't do much in terms of ensuring we are operating a viable IT operation. We recent had severe security problems and intrusion vulnerabilities that we were unaware of.

- I'm not sure that the CIO's vision for County IT is well understood. It is presented in the BAP instructions and in formal presentations such as the TSAB meetings, but there is precious little of the routine continuing conversation about the CIO's vision that might lead to deeper understanding. I think that that is no particular antipathy to talking between departmental CIOs and the County CIO, but there is a crushing workload on both sides and no formalized opportunities to create that conversation.

- Partner with departments to implement small scale pilots or proof of concept prior to embarking on a Countywide system. The CIO should serve as an enabler for the departments, instead of running IT projects especially for business initiatives.

- I don't know anyone that actually reads the IBAP. It is after the fact.

  The survey is a little too black and white to get at the subtleties and variability of some of the CIO efforts. Many of my "neutral" responses above reflect areas in which I'm aware of the CIO doing very good work in some instances and less effective work in others. The Cognos initiative is an example of a CIO project that I originally thought unnecessary but that has since proven to be very important to this department. Other efforts haven't gotten quite that much traction; the work in the area of content management comes to mind, although that looks like it is moving in a productive direction now. The fact that they manage any initiatives successfully given the limited staffing is to be commended.

Setting Strategy

- As a result of the various department's BAPs, make a clear strategy each year that supports the overall goals of the various departments and make this plan clear to department CIO's but especially department heads. It is not always clear what enterprise efforts are targeted each year and the target for each. This would help each department to better plan their own efforts.

- I'm not sure that the CIO's vision for County IT is well understood. It is presented in the BAP instructions and in formal presentations such as the TSAB meetings, but there is precious little of the routine continuing conversation about the CIO's vision that might lead to deeper understanding. I think that that is no particular antipathy to talking between departmental CIOs and the County CIO, but there is a crushing workload on both sides and no formalized opportunities to create that conversation. (duplicate: relevant to this category as well as the Leadership category)

- More emphasis on formal strategy and building partnerships with departments would help in the success of countywide intitiatives (sic).

Understanding the Clients Needs.

- Recognizing the unique needs of departments and helping them utilize the most appropriate technology for their specific needs. Given the size and diversity of the County departments, one size does not fit all.

- The Office of the CIO has no operational responsibility to support service delivery. As such, it is easy for them to become somewhat removed from the day to day concerns of running an IT operation in a service delivery organization. They can be, at times, rather Hall of Administration centric. That is a necessary perspective for their work, but it needs to be balanced by an understanding of the operational concerns of line organizations.

  One of the places where this plays out is in initiatives that may be important to a department, but that show up in the middle of a fiscal year without much prior notice. Few departments are sufficiently well staffed to absorb an unplanned project of any scale without causing problems in other areas.

  An example of this is the current effort to come to a master agreement for content management software. This is important to most departments, and highly important to some, but the BAP instructions for FY 06-07 did not identify this as a Countywide project to which departments were expected to contribute. If that had been the case, we could have planned ahead. As it is we are adjusting on the fly and negatively impacting important departmental initiatives to which we are already committed.

- Business Planning. The CIO needs to understand that technological direction is based upon the business needs of the organizations and not the opinions of technologists.

Providing Support.

- Why wouldn't the CIO ensure all departments have adequate security controls for their systems? While it is the job of our IT Section Manager, he/she is not a true CIO, with the background and experience to manage all IT functions. In fact, the position usually attracts first time low-level IT managers looking to broaden their horizons. This is but one of many examples where the CIO's office should be taking the lead. Our own IT staff is limited in size and knowledge, and we have relatively low level positions compared to larger departments, further impacting our ability to "keep up" with the bigger departments.

- Be more responsive to telephone calls and provide more hands-on support when requested. 2) Enforce County Departments to maintain hardware and software standards.

- The ability to provide more hands-on full time support, as necessary, for large department specific IT initiatives.

- Assisting the Department of Human Resources and Chief Administrative Office to complete the Countywide IT classification study which has been in progress for years with no end in sight.

- Level of assistance and technical guidance provided to department's on resolving IT problems and on improving current IT environment.

- Having the resources to dedicate more time and participate with department IT organizations.

- The CIO is doing a very effective job considering the number of resources that he has and the numerous IT activities that are constantly underway.

- CIO needs to be more aware of minimal staff resources and the complexities of smaller departments

- Provide solutions for small departments other than shared services.

- I think the CIO's office performs effectively in all areas considering the minimal staff they have and the breadth and depth of knowledge they must have. If there was one area the CIO could be more effective, maybe in the area of improving Enterprise staff recruitment, retention, training, and classification.

- Providing departments support for, or even requiring process improvement in areas such as project management, use of ITIL - best practices for IT Service Management, and IT Performance Measurements.

- Be more responsive and flexible, knowingly CIO Office is short of the resources.

APPENDIX C
CIO Staff Survey and Results

APPENDIX C-CIO STAFF SURVEY RESULTS

The majority of the Associate CIOs and the Senior Technology Consultants indicate that the percentage of their time devoted to project management activities distracts from fulfillment of their job descriptions. On average, 35% of their time is spent managing project. These respondents felt that 10%, on average, would be more appropriate. This would allow more time to be spent on:

- Project monitoring
- Support and liaison activities
- Developing and implementing best practices
- Developing strategy
- Devoting time to their area of individual expertise

Item	Current (C) Preferred (P)	Associate CIO	Senior Information Technology Consultant	Overall
1. % of Time spent doing:				
• Project Monitoring and Oversight	C	15.0%	10.0%	13.0%
	P	18.0%	30.0%	23.0%
• Hands-on Project Management	C	25.0%	53.0%	36.0%
	P	1.7%	0.0%	1.0%
• Individual Department Level Support and Liaison	C	6.7%	18.0%	11.0%
	P	15.0%	10.0%	13.0%
• Best Practices Research	C	6.7%	2.5%	5.0%
	P	8.3%	13.0%	10.0%
• Assisting Liaison Departments in Setting and Implementing Their IT Strategy	C	8.3%	5.0%	7.0%
	P	15.0%	15.0%	15.0%
• Focus on areas of expertise (e.g. security, e-commerce, BI, etc.)	C	37.0%	13.0%	27.0%
	P	40.0%	23.0%	33.0%
• Other: Contracts & Board Letters; County Overall IT Strategy and Governance	C	5.0%	0.0%	3.0%
	P	1.7%	10.0%	5.0%
2. % of Time Firefighting		16.7%	30.0%	22.0%
3. Time spent is consistent with MAPP goals		Y	Y	Y
4. % of time spent on MAPP goals		70.0%	65.0%	67.5%
5. Number of distinct activities in an average week		6.5	8.5	7.5